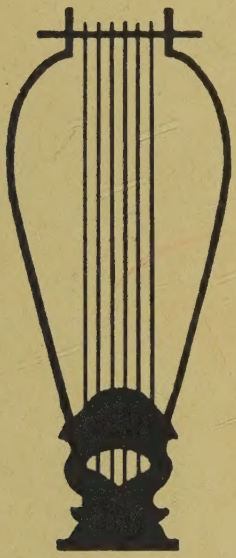
CONCORD SERIES NO. 12

PRINCIPLES of MUSICAL THEORY

RENÉE LONGY - MIQUELLE



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CONCORD SERIES

PRINCIPLES *of* MUSICAL THEORY

BY

RENÉE LONGY-MIQUELLE

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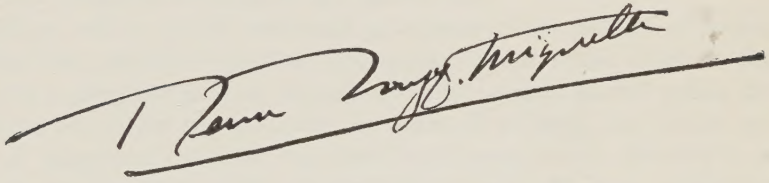
TO MY SOLFÈGE PUPILS,
AND ESPECIALLY TO THE "MEDALISTS,"
CLASS OF 1924, WITH KINDEST
GREETINGS TO ALL.



PREFACE

A knowledge of the elements of music is of the highest importance in music education. Too often American students undertake the study of the higher branches of the art without first submitting themselves to a thorough drill in musical fundamentals. Conductors of amateur orchestras and choruses, as well as teachers of classes and individuals, are constantly balked by the lack of elementary knowledge on the part of their students, and this defect is made worse by the fact that we are forever seeking short cuts to learning instead of making every effort to secure thoroughness.

Everyone undertaking the study of music should acquire five indispensable possessions: first, an exact knowledge of the substance of music; second, a well-trained ear; third, the ability to do with the eye what is ordinarily done by the ear; fourth, a thoroughly developed rhythmic sense; and fifth, a sound and discriminating musical taste. These are not only necessary to an intelligent appreciation of music and to a successful participation in it, but they are essential prerequisites to the study of harmony and the more advanced branches of music. It is safe to say that not one in a hundred American music students is in even moderate possession of these five details, and yet schools and music teachers continue to offer inadequate fundamental instruction, hoping, apparently, that intuition will supply the deficiencies.

This book, therefore, will be gladly welcomed by conscientious teachers of music, for it presents in clear and definite form that information about music which is the most important step to a complete musical education. But to yield its full value, the material here presented should be supplemented by work in solfeggio and music appreciation, for only if supported by these will this book prove really effective to a student who wishes to participate in music, or who wishes merely to be an intelligent listener.

Students will find here more than an enumeration of facts about music, for the text is illustrated by a number of passages drawn from actual compositions. A knowledge about music is comparatively valueless unless one can apply that knowledge to music itself.

The author of the book, a musician with long experience as a teacher, has devoted herself to reconciling the pedagogic vagaries of our public school systems with the very exact methods of French teachers of musical fundamentals, and her observations and efforts have resulted in this excellent work. To those who desire a clear, thorough, and systematic explanation of the fundamentals of music, this book will make a marked appeal; and for teachers who seek a textbook for classes in elementary music, the present volume will appear as a real contribution to the literature of music pedagogy.

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PRINCIPLES OF MUSICAL THEORY

CHAPTER ONE

Musical Sounds and Signs of Intonation

MUSIC is the art of expressing sentiments and emotions of all kinds by means of **sounds.**

(a) Sounds producing Music are called **musical sounds,** or **tones.**

(b) The system of Signs used in writing music is called **notation.**

(c) The study of Notation; the training of ear and memory; the laws of Time, of Tonality; the general principles of Musical Interpretation, — all pertain to the study of **Solfeggio** (or *Solfège*).

(d) Sounds can be emitted singly, in succession, or simultaneously.

(e) A succession of different sounds, emitted *singly*, constitutes a **melody.**

(f) When sounds are emitted *simultaneously*, according to certain laws, they form **chords,** or **harmony.**

(g) A Piece of Music: —

1. When composed for *one* voice or instrument only, is called a **solo.** (A solo — either vocal or instrumental — is generally written with a piano accompaniment.)
2. When composed for *several instruments*, it is called **instrumental,** or **orchestral,** music.
3. When composed for *several voices*, it is called **choral** music.
4. When composed for a *smaller group* of voices or instruments, or both, it is called **ensemble,** or **chamber** music.

Musical Sounds have Four Qualities: —

1. Sounds are *high* or *low*; their height relationship is called **intonation** or **pitch.**
2. Sounds last a *longer* or *shorter* time; their length relationship is called **duration** or **valuation.**
3. Sounds are *more* or *less* powerful; the relationship of their power is called **intensity.**
4. Sounds have that peculiar quality which enables the attentive hearer to tell whether an instrument or a voice, or *what* instrument, is emitting the sounds. This *tone-quality* is known as **timbre.**

Four (4) kinds of Signs are used to indicate Intonation: —

1. **Staff**
2. **Notes** (Pitch-names)
3. **Alterations**
4. **Clefs**

The STAFF consists of five (5) parallel, equidistant, and horizontal lines, counted from bottom to top. The distances between the lines are called spaces or interlines, of which there are four (4) and which are also counted from bottom to top.

Ex: Spaces { 4th, 3rd, 2nd, 1st } Lines { 5th, 4th, 3rd, 2nd, 1st }

Signs (*notes*) are written on each *line* and within each *space* of the Staff, also directly above the fifth line and below the first.

Ex: Notes on lines and in spaces — above 5th line; below 1st line

In order to widen the scope of the staff, it is possible to add smaller horizontal lines, parallel to those of the staff (above or below it), and write on each, and within the spaces formed by the addition of these small lines. These are called **leger-** or **added-lines;** their number is not limited, but it is generally the practice not to use more than five (5) both ways.

Ex: Leger-lines: above and below the staff

NOTES (*Pitch-names*) are represented by seven (7) different letters or syllables: (See page 94.)

Letters: A — B — C — D — E — F — G
Syllables: La — Si — Do — Re — Mi — Fa — Sol

Note: The use of syllables having a definite pitch greatly facilitates proper enunciation in sight-singing, particularly at a quick rate of speed.

It is therefore necessary to form the habit of considering each syllable as the exact translation of the letters, and as absolute pitch, rather than as a symbol used to denote a particular degree number of any scale.

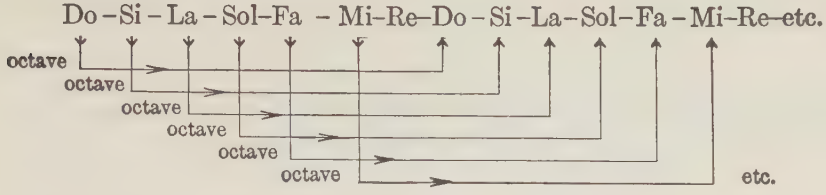
Do always stands for and means **C**; **Sol** always stands for and means **G**; etc.

Thus, "La, Si, Do, Re, Mi, Fa, Sol" produce an *ascending* series of pitches. Similar series of seven (7) tones may be added to the first. The interval between the first note of a series and the like-named one of the next series is called an **octave.** The series may be started on any one of the syllables or letters; the interval between two like-named notes at a distance of seven (7) pitches is always an octave.

Ex: Ascending: Do–Re–Mi – Fa – Sol – La – Si – Do–Re–Mi–Fa – Sol –La–Si– etc.

octave
octave
octave
octave
octave
octave
etc.

Reversely, it will produce a *descending* series of pitches:



ALTERATIONS are signs used to modify the natural pitch of the notes before which they are placed. There are five (5) kinds of alterations: (See page 29.)

1. Flat. . . . . ♭
2. Double-flat. . . . . ♭♭
3. Sharp. . . . . ♯
4. Double-sharp. . . . . × or 𝄪 (or 𝄫 or ♯♯)
5. Natural. . . . . ♮

Alterations have an absolute effect, as to pitch, upon the notes before which they are placed. They must be written in the same space or upon the same line as the notes they are to modify; but, once written, their effect is prolonged upon *all* the notes of the *same* name, and within the *same* measure,* until another kind of alteration is encountered.

The **sharps** and **double-sharps** come in the following order:

Fa, Do, Sol, Re, La, Mi, Si
F —C —G—D—A—E —B

The **flats** and **double-flats** come in just the opposite order:

Si, Mi, La, Re, Sol, Do, Fa,
B—E—A—D—G —C —F — (See page 37.)

CLEFS are signs used to determine the exact position, name, and height relationship of the notes. There are three (3) clef-signs:

1. **G-**(Sol-) **clef** 𝄞 (two positions)
2. **F-**(Fa-) **clef** 𝄢 (two positions)
3. **C-**(Do-) **clef** 𝄡 (four positions)

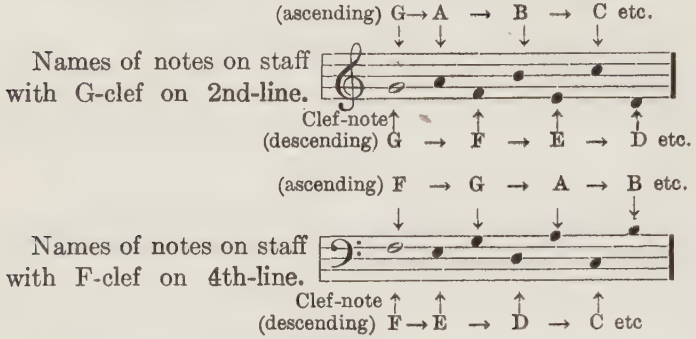
The G-(Sol-) and F-(Fa-) clefs are commonly, though incorrectly, called the "Treble" and "Bass" clefs, respectively.

Wherever a clef-sign is placed upon the staff, it gives its name to the line upon which it rests. Any note on this line derives its name from the affixed clef. The note so placed is called the Clef-note, or the Clef-tone.

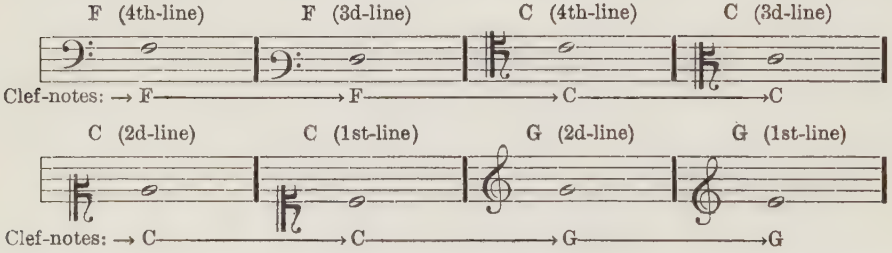
The name of one note being known, and its position upon the staff determined by means of the clef-sign, the position and name of all other notes are easily found.

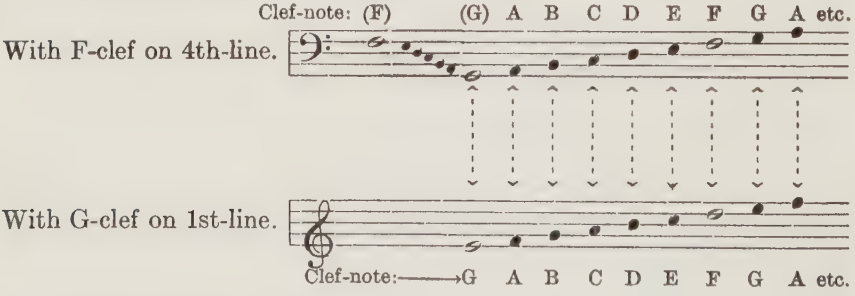
* The term "Measure" is explained on page 19.

For example: if we call a note on the second line of the staff " G," on account of the G-clef being placed on that second line, the note in the next space above will be called " A," the next above (third line) " B," etc., and reversely, downwards.


(ascending) G → A → B → C etc.
Names of notes on staff with G-clef on 2nd-line.
Clef-note
(descending) G → F → E → D etc.
(ascending) F → G → A → B etc.
Names of notes on staff with F-clef on 4th-line.
Clef-note
(descending) F → E → D → C etc

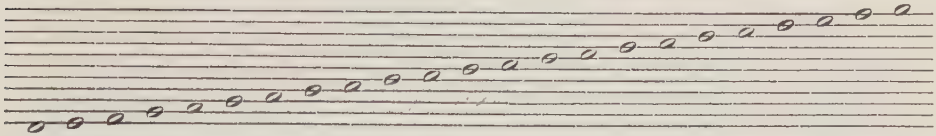
Beginning with the clef with which the lowest notes and lowest registers are obtained, and proceeding upwards, we have: —



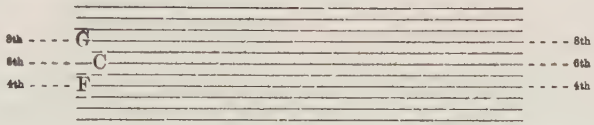
Note: The G-clef on the first line is not in use at the present time (except for clef-reading-training), for it gives to notes the same names as if they were preceded by the F-clef on the fourth line. It was previously used to read music written for high voices, or for children's voices; it sounds two octaves higher than the F-clef on the fourth line:

THE UTILITY OF THE DIFFERENT CLEF-SIGNS; THEIR RANGE AND THEIR RELATIONSHIP

In former times, when human voices were about the only means by which music could be rendered (instruments being extremely primitive), and the voices not being trained as they are now, it was customary to write music on a staff of eleven (11)

lines and ten (10) spaces, called the **Great** or **Grand staff,** which sufficed for the notation of *all* the tones emitted by voices of average range:



In order to help the readers, in finding the tones they were to sing, the three Gothic letters, F — C — G were placed upon the fourth, sixth, and eighth lines of the Great staff, respectively:

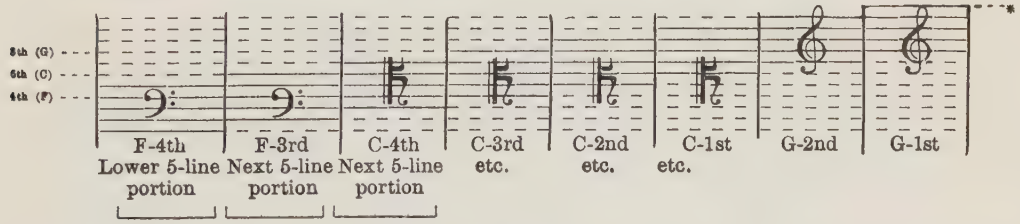


These letters have been transformed considerably as to their form, and have become the three clef-signs used at the present time.

F ---- C ---- G ----

For voices of unusual range, it was found necessary to extend the number of lower and higher notes, and the leger-lines were added. (See diagram on page 6.)

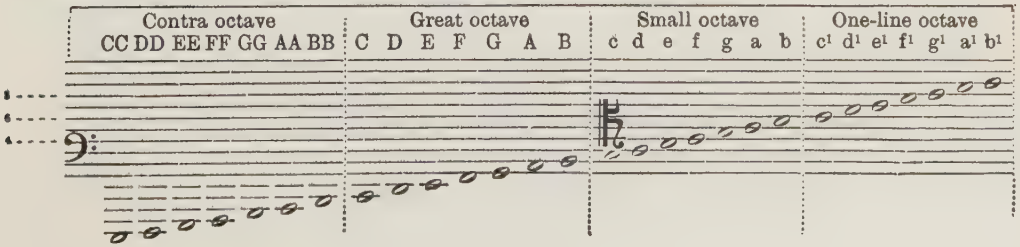
Later on, the use of the Great staff was found to be unnecessary, since each particular voice needed only a small portion of it. To simplify matters, a small portion of five lines was found sufficient for each voice, hence, our modern five-line staff. Each voice was assigned its own staff-portion with the corresponding letter, (clef-sign):



* Added higher line for high voices (women and *children*).

The ensemble of tones written upon the Great staff, using leger-lines, above and below, is called: **Musical Ladder,** or **Cycle of Sounds.**

To determine the exact location (or register) of the notes, the whole cycle is divided into groups of seven tones, each starting on Do (C):



(Sub-contra-octave) . . . . (CCC — DDD — EEE — FFF — GGG — AAA — BBB) seldom used.
Contra-octave. . . . . CC — DD — EE — FF — GG — AA — BB
Great octave. . . . . C — D — E — F — G — A — B
Small octave. . . . . c — d — e — f — g — a — b
One-line octave. . . . . c¹*—d¹ — e¹ — f¹ — g¹ — a¹ — b¹
Two-line octave. . . . . c² — d² — e² — f² — g² — a² — b²
Three-line octave. . . . . c³ — d³ — e³ — f³ — g³ — a³ — b³
Four-line octave. . . . . c⁴ — d⁴ — e⁴ — f⁴ — g⁴ — a⁴ — b⁴

CHAPTER TWO

Signs of Duration

Sounds last a *longer* or *shorter* time. The *relationship of their length* is called **Duration** or **Valuation.**

Duration comprises four kinds of signs:

1. **Note-values**
2. **Rests**
3. **Dots**
4. **Ties**

NOTE–VALUES. — The length relationship of notes is determined by nine (9) different symbols named:

1. **Maxim** or **Breve** or **Double-whole Note** (or or)
2. **Whole Note**
3. **Half-note**
4. **Quarter-note**
5. **Eighth-note**
6. **Sixteenth-note**
7. **Thirty-second-note**
8. **Sixty-fourth-note**
9. **Hundred-and-twenty-eighth-note ***

Given in the above order, each value is *twice as long* as the immediately *ensuing* one; or, reversely, is *twice as short* as the immediately *preceding* one.

As shown in the following Diagram, the note-values are arranged in their natural order. They are Plain note-values, and are known as **binary notes** (or *binary units*, or *binary values*). (See diagram on **page 8.**)

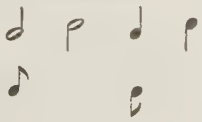
* *Note:* The *hundred-and-twenty-eighth-note* is hardly used at all. The writer knows of only one example in modern music, "Variations in A-minor," for piano, by Edward Royce; also in Beethoven's "*Sonata Pathetique*" (Introduction).

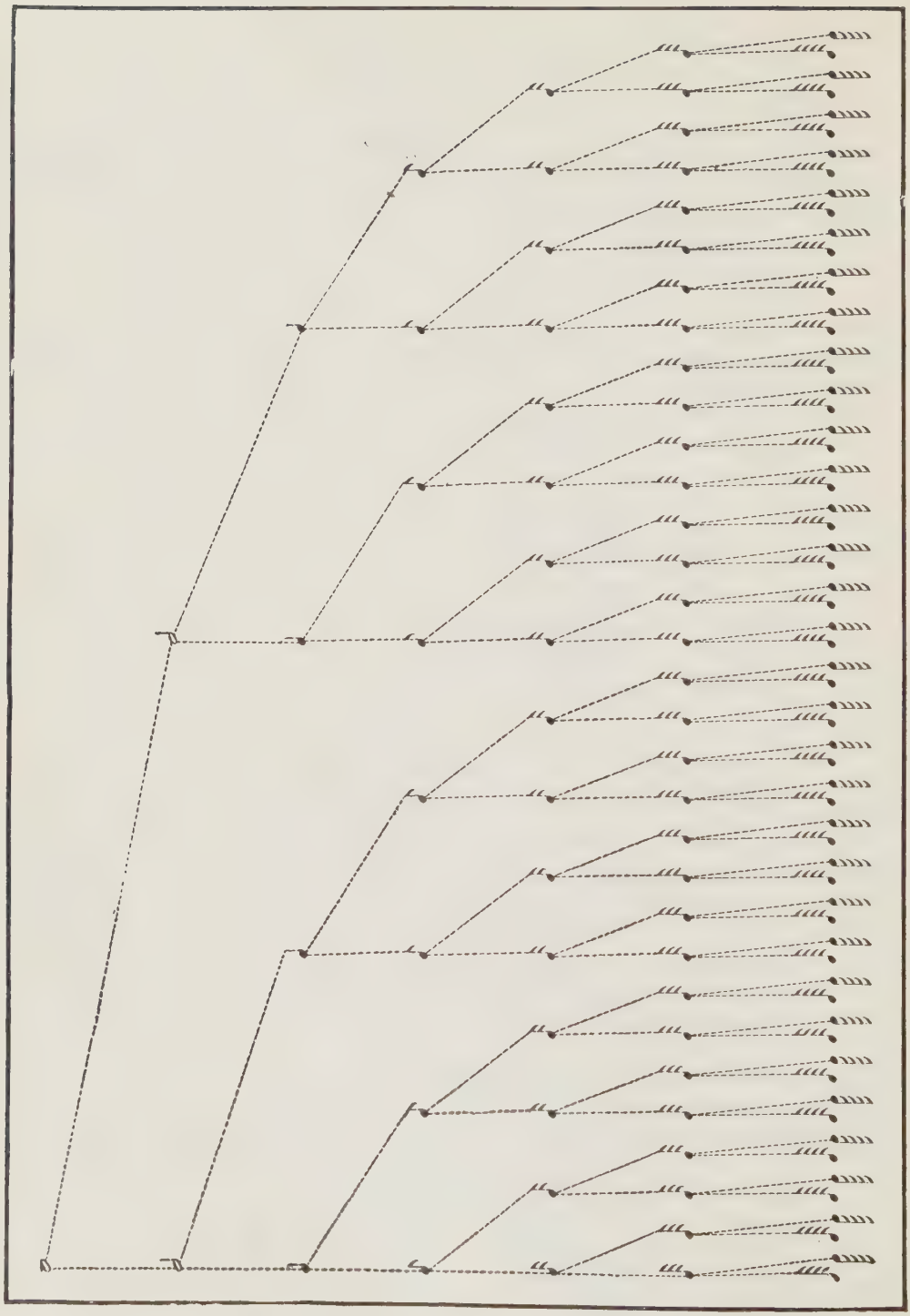
The round part of a note is called the **head:** (or)

The line drawn to the head of the note is called the **stem:** |

The curved line attached to the stem of the note is called the **hook:** (or)

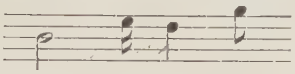
completed

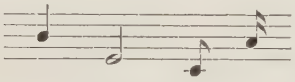




(Diagram 1)

It is always best to write the head of the note first on the staff; then, according to the line or space upon which it is placed, trace the stem:

Downwards, if the note is placed anywhere from the third line up:

Upwards, if the note is placed anywhere from the third line down:



When tracing the stem down, place it to the *left* of the head:

When tracing the stem up, place it to the *right* of the head:

When several 8th, 16th, 32nd or 64th notes are written in succession, it is customary to join them with a " beam " (or several beams) corresponding in number to that of the hooks of the notes:

The notes so joined are grouped by beats.[1]

In vocal music, it is the practice to use the hooks even if several such notes are in a series, especially if each note has a syllable of the text. When one syllable is related to several of these " hook " notes, replace these by the beams, and, in beats.

Rests indicate a stop in musical sounds. They replace the note-values, taking their places momentarily. They are named similarly, and have the same length relationships.

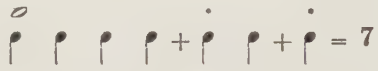
1. **Maxim Rest** or **Breve Rest** or **Double-whole Rest**
2. **Whole-rest** (below 4th-line of the staff)
3. **Half-rest** (above 3rd-line of the staff)
4. **Quarter-rest**
5. **Eighth-rest**
6. **Sixteenth-rest**
7. **Thirty-second-rest**
8. **Sixty-fourth-rest**
9. **Hundred-and-twenty-eighth-rest**

[1] The word "Beat" is explained on page 19.

Dots. — The length of notes and rests can be increased by the addition of one or more dots, placed after the note or rest.

One dot after a note or rest will add half the value of the note or rest itself. One dot after a note or rest makes a total of three (3) units:

A second dot will add half the value of the first dot.
Two dots make a total of seven (7) units:

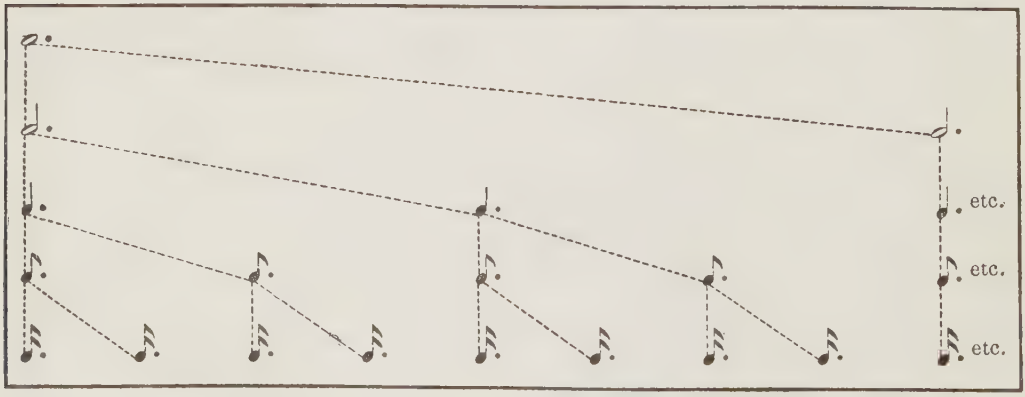


A third dot will add half the value of the second dot.
Three dots make a total of fifteen (15) units:

It is the custom not to use more than three (3) dots after a note or rest.

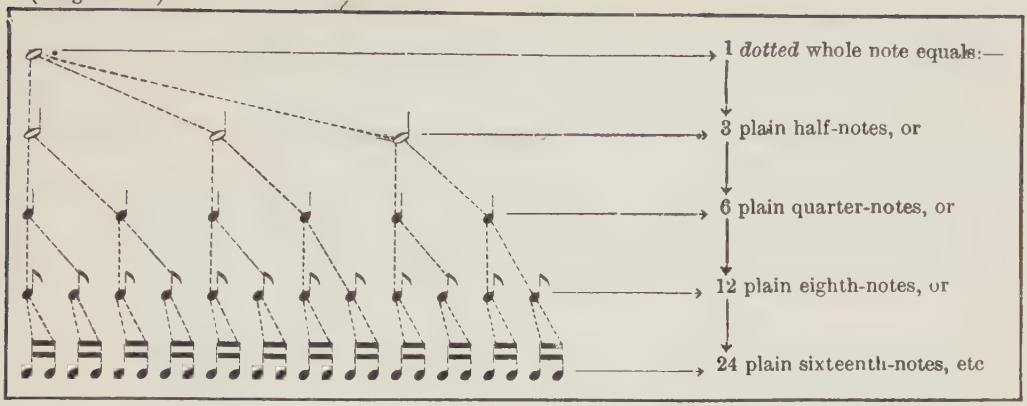
All dotted values (once, twice or three times dotted) can compare like the plain values (see Diagram I) as follows:

(Diagram II)

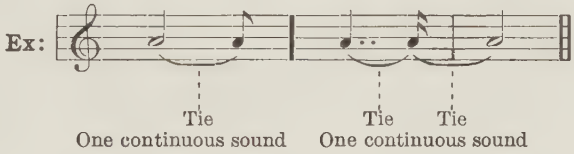


Once-dotted values are also known as **ternary-notes** (or *ternary units*, or *ternary values*) for they are naturally divisible by 3 and all multiples of 3, in geometrical progression.

(Diagram III)


1 *dotted* whole note equals:—
3 plain half-notes, or
6 plain quarter-notes, or
12 plain eighth-notes, or
24 plain sixteenth-notes, etc

Note: All note- and rest-values (plain or dotted) proceed, as to their relationship of time-value, in geometrical progressions.

TIES. — It is possible to increase the length of note-values in another way than by the use of dots. This other way applies to note-values only, *not* to rest-values. It consists in connecting the heads of two or more plain or dotted values by a curved line called a **tie**, provided the notes so joined are of the *same* pitch:

ARTIFICIAL DIVISIONS

According to the paragraphs on note-values, it has been remarked that any value is divisible into so many parts, in geometrical progressions, which give durations equal to one-half or one-fourth, or one-eighth or one-sixteenth, etc., part of another unit, thus limiting the possibilities of note-valuations.

However, besides these *natural* divisions of the different note-values, it is possible to obtain other fractional parts of a given unit, such as one-third, one-fifth, one-sixth part, etc.

Artificial divisions of Plain-units

The numbers that represent the natural divisions of any plain unit must be borne in mind, which numbers are: 2, 4, 8, 16, 32, 64, as the case may be.

Any *other* number represents an *artificial* division of that unit, such as: 3, 5, 6, 7, 9, etc. For these artificial divisions, the regular note-values are used. In order to know *which* kind is to be used, choose the kind of note that represents the *nearest even natural division* to the artificial number. If that artificial number happens to be at an equal distance from *two* of the natural division numbers, choose the kind of note-value represented by the *smaller* number of the two.

For example: The artificial number being *six* (6), we find that 6 comes evenly between *four* (4) and *eight* (8), the two *natural divisions* to be considered.

Use the kind of note that represents the fourth part of the unit which is to be divided, and write six (6) of these in order to form the desired group.

In dividing a plain unit into three (3) equal parts, think of using the values that divide it into two (2) parts.

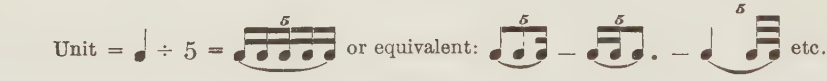
Then write three (3) of these half-values (or their equivalent), writing the figure *3* above or below the group, to indicate its division into three equal parts.

A group of three equal notes (or equivalent) is called a **triplet.**

In dividing a plain unit into five (5) equal parts, think of using the values that divide it into four (4) parts.

Then write five (5) of these values (or their equivalent), writing the figure *5* above or below the group to indicate its division into five equal parts.

A group of five equal notes (or equivalent) is called a **quintolet** or *quintuplet.*



Artificial divisions of Dotted-units.

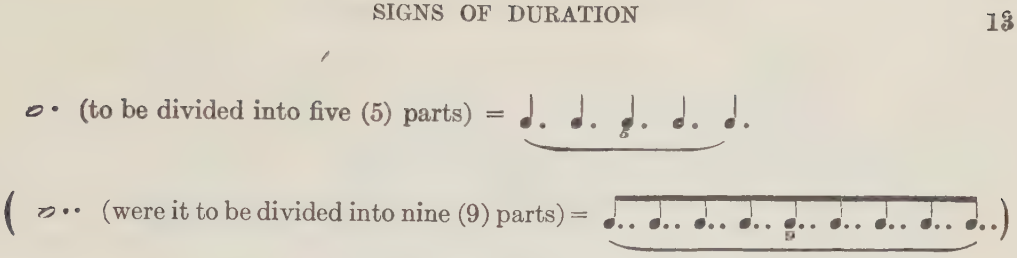
Bear in mind the numbers that represent the natural divisions of any dotted-unit, which numbers are: 2, 3, 4, 6, 8, 12, 16, 24, 32, 48, 64, 96, as the case may be, for *once* dotted-units; and: 2, 4, 7, 8, 14, 16, 28, 32, 56, 64, 112, as the case may be, for *twice* dotted units.

Any *other* number represents an **artificial** division of that unit.

For these artificial divisions, proceed as explained in the preceding paragraph (artificial divisions of **plain** units), using the kind of note that represents the nearest even **binary** division to the artificial number.

The notes in these artificial groups will be *dotted* in the same proportion as the unit that is being divided.

Or, think of all the natural divisions of the unit, then mentally suppress the dots and proceed as if the unit was a plain note to be artificially divided; when the kind of note to be used is found, write as many as are necessary to make the group, and add as many dots after each note in the group as there were after the initial unit just divided.

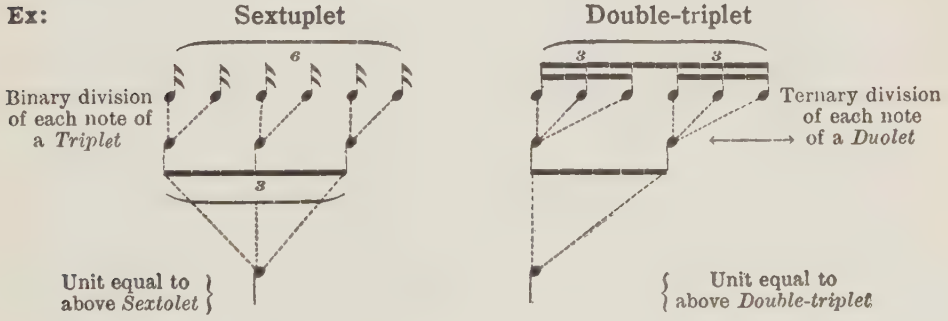


NAMES OF GROUPS:

A group of two (2) equal notes (or equivalent) is called a **duolet** or *duplet*
" three (3) " " " **triplet**
" four (4) " " " **quartolet** or *quadruplet*
" five (5) " " " **quintolet** or *quintuplet*
" six (6) " " " **sextolet** or *sextuplet** and *double-triplet**
" seven (7) " " " **septolet** or *septuplet*
" eight (8) " " " **octolet** or *octuplet*
" nine (9) " " " **nonolet** or *nonuplet*
" ten (10) " " " **dextolet** or *dextuplet*

Beyond 10, one says: 11, 12, 13 or 14 notes, etc.

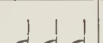
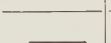
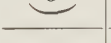
* A **Sextolet** (or *sextuplet*) is the result of the **binary** division of each note of a Triplet, while a **double-triplet** is the result of the **ternary** division of each note of a **duolet.**



Note: Another principle, as to the notation of artificial divisions of units, has been in common use. Both the principle (as explained previously) and the older one are good, but the most modern one has been described.

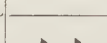
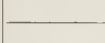
The older principle consists in using the same kind of note for all divisions, until the next natural figure is encountered.

EXAMPLES OF ARTIFICIAL DIVISIONS OF PLAIN UNITS

Units	2 parts	3 parts (triplets)	4 parts	5 parts (quintolets)	6 parts (sextolets)	7 parts (septolets)	etc.
							etc.
							etc.
							etc.
							etc.

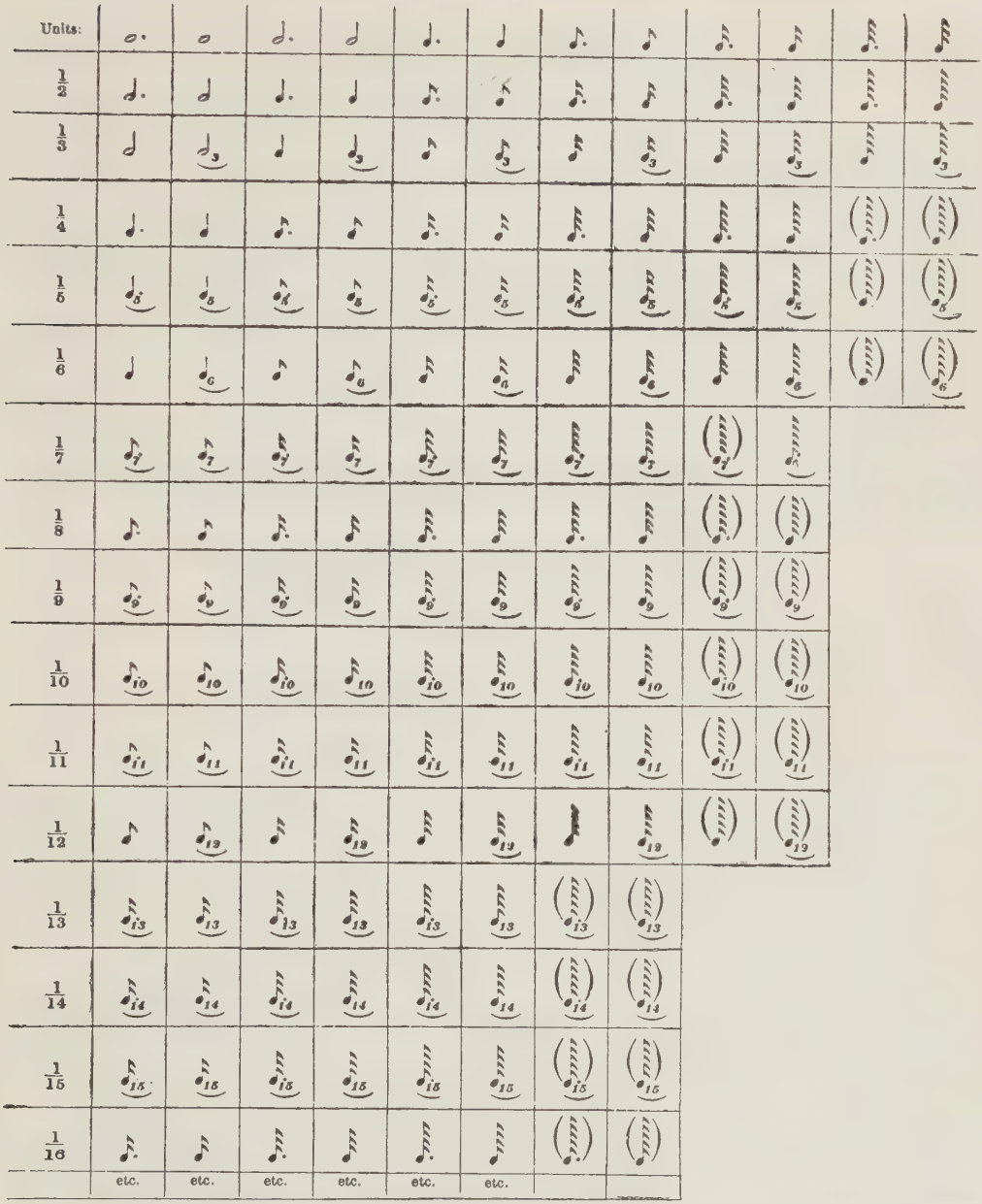
(See table on page 8 for divisions into 8, 16, 32, and 64 parts.)

EXAMPLES OF ARTIFICIAL DIVISIONS OF DOTTED UNITS

Units	2 parts (duolets)	3 parts	4 parts (quartolets)	5 parts (quintolets)	6 parts	etc.
						etc.
						etc.
						etc.
						etc.

(See Diagrams II and III on pages 10 and 11.)

Specimens of Values Representing Fractions of Other Units



Note: It is to be remarked that a "Twice-dotted-unit" will naturally be divisible into seven (7) parts and all multiples of 7 (in geometrical progressions), and a "Thrice-dotted-unit" will be divisible into fifteen (15) parts and all multiples of 15 (in geometrical progression).

Ex: 𝅗𝅥.. = 7 ♩ or 14 ♪ or 28 𝅘𝅥𝅯 etc.

𝅗𝅥... = 15 ♪ or 30 𝅘𝅥𝅯 or 60 𝅘𝅥𝅰 etc.

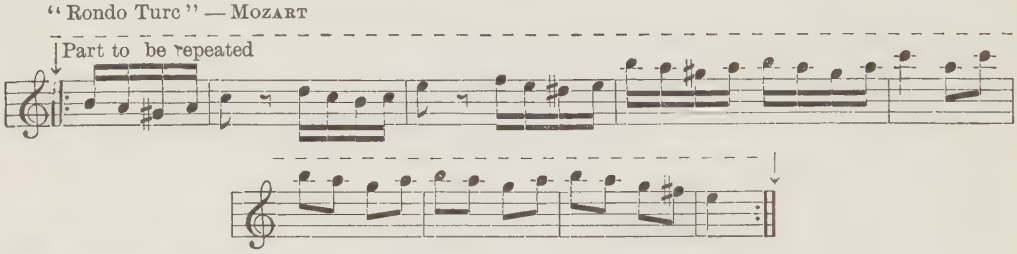
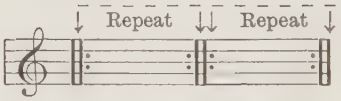
CHAPTER THREE

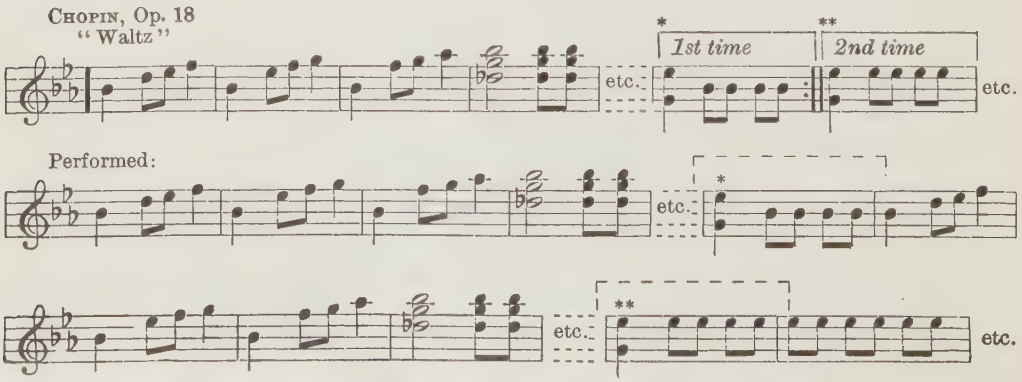
Musical Abbreviations: Their Notation and Their Effect

There are certain conventional signs and words, in music, used as *abbreviations*, in order to simplify music writing.

Double-bars, Repeats, etc.

Double-bars are often found in the course of a composition, indicating a change in Time* or in Key*; these are also found differently, two dots, (one above the other) being placed either before or after the double-bar, thus :‖ or ‖:

The dots so placed, indicate a **repeat,** meaning that one must perform the part just played a *second time.*

Two consecutive repeats will be indicated thus:

When the words *1st time* are written above the measure of the repeat-dots, and the measure next to it indicated as *2nd time,* it means that, when playing, one must perform as usual to the first double-bar, then repeat the part just played, and when playing through the second time, to omit the "1st time" measure and play the "2nd time" measure in its place.



* The words "**Time**" and "**Key**" are explained on pages 19 and 47 respectively.

D.C. — (an abbreviation for the Italian words *Da Capo*) signifies that the executant should *return to the beginning* of the piece or movement, and repeat the same until the word **Fine** is encountered.

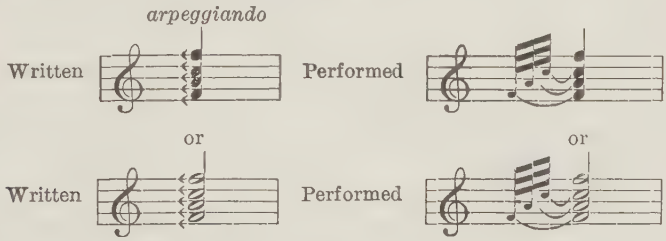
The sign, 𝄋 (sometimes accompanied by the words *al Coda*) means that the executant (when playing through the *2nd time*) should go from the sign (𝄋) to that position in the piece or movement marked *Coda*.

Segno (𝄋) this sign, if used, occurs twice. The first occurrence, when it is placed above or below a single- or double-bar, signifies the place to which the executant must return (and repeat from) after arriving at the place indicated by the second appearance of the sign.

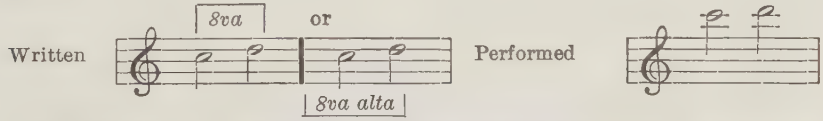
Often the second *Segno* is accompanied by the words *Da Capo,* or simply the letters *D.C.*, meaning to *play again*, from the *beginning* of the piece to the word *Fine.*

If repeats were made (when playing through, for the first time) the same repeats *must not be made* when playing for the second time.

Simile means " similar," and that the *same* phrasing, etc., is to be continued.

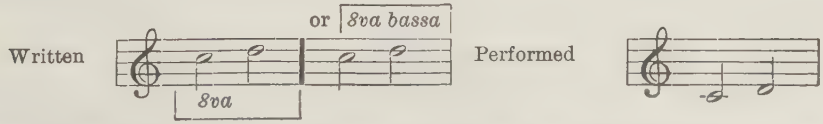
Arpeggiando, or the sign ⦚ means that the notes of the accompanying chord are to be played quickly in succession from the lowest note up.

Ottava placed *above* notes (or *8va*) means that these notes are to be played an *octave higher* than written.

The word *Alta* often accompanies the word *ottava*, especially when there is no space for the word *ottava* to be written *above* the notes. The word *Alta* means *higher* (*8va alta*).



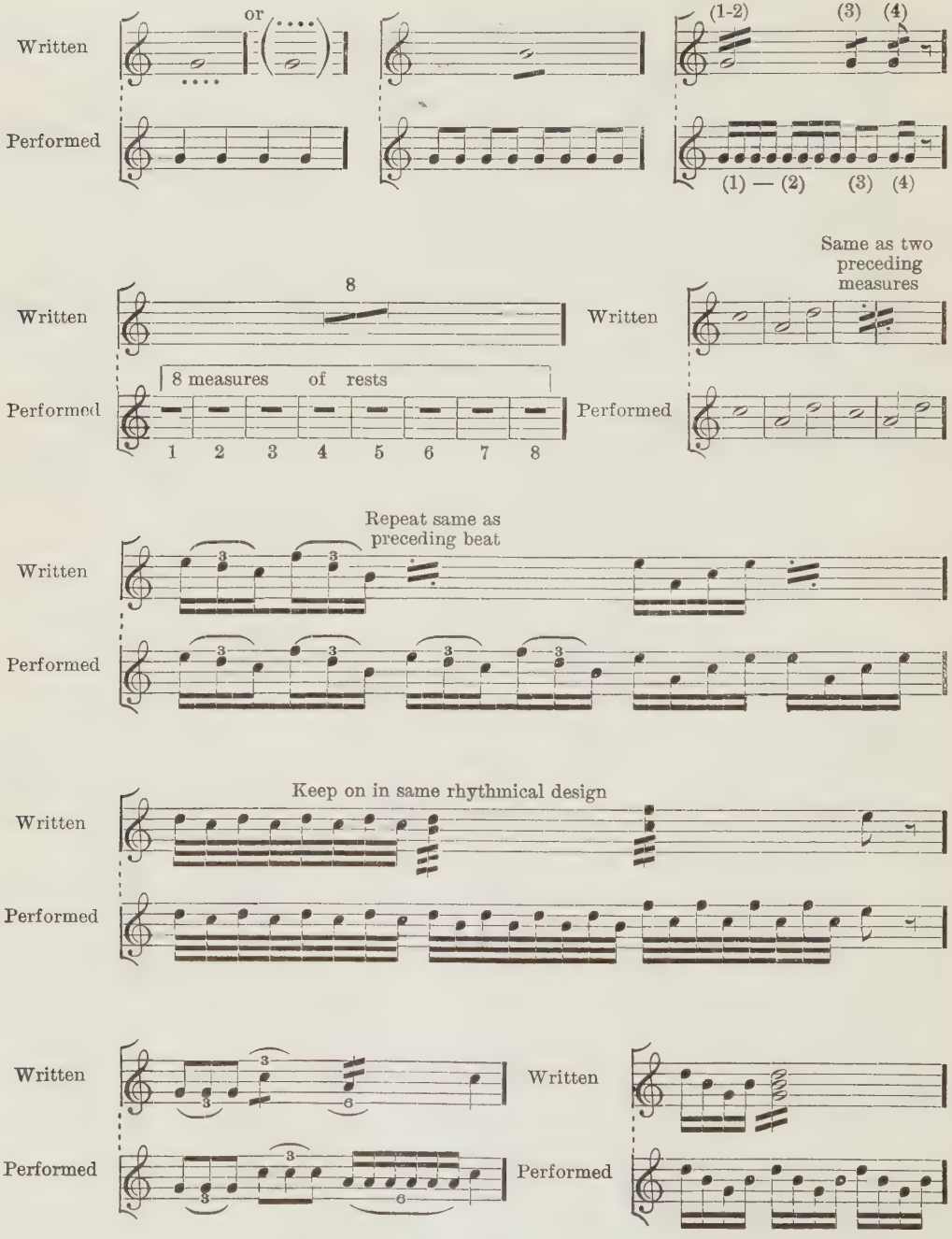
Ottava placed *below* notes (or *8va*) means that these notes are to be played an *octave lower* than written.

The word *Bassa* accompanies the word *ottava* when the latter is not written *below* the notes and when these are to be played an *octave lower*. The word *Bassa* means *lower* (*8va bassa*).



Loco cancels the effect of a similar passage previously marked *8va alta,* or *8va bassa,* meaning to play the passage as *actually written.*

OTHER SIGNS (more commonly used in writing Scores,* Orchestral parts and Accompaniments):



* The word "Score" is explained on page 86.

CHAPTER FOUR

Time and Time-Signatures; Rhythmical Forms

Note and **rest-values,** as given in Chapter Two (page 7) do not have a definite length; they only possess a *relative* length.

Their *exact* time-value is determined by what is known as the **Time-signature.**

The Time-signature determines the *exact duration* of notes written within the particular piece to which the Signature is affixed, and it is continuous in effect until another Signature occurs, which, in turn, similarly effects the note-values.

A piece of music is commonly divided into small fragments called **Measures.**

Measures are separated from each other by light vertical lines drawn across the staff, which are called **bar-lines,** or **measure-lines,** or simply **bars.**

The measures are divided into small parts of equal duration called **beats.**

There are accented and non-accented beats, and the group of beats, from the most accented to the next most accented beat, forms a measure.

The number of beats that are to be found in each measure is indicated at the beginning of the piece (or after a double-bar) by two (2) figures, written in the form of a fraction. These two figures form what is known as the **Time-signature,** (or simply the **Time**):—

Ex: $\frac{3}{2}$ or $\frac{4}{4}$ or $\frac{6}{8}$ etc.

There are two (2) sorts of time used commonly:—

1. **Simple Time**.....which means that each beat in a measure is filled by a *binary* note-value (or its equivalent).
2. **Compound Time**.....which means that each beat in a measure is filled by a *ternary* note-value (or its equivalent).

Simple Time

The time is **Simple** when the upper figure of the Time-signature is *not* more than once divisible by three (3):—

Ex: $\frac{2}{(2)}$ or $\frac{5}{(4)}$ or $\frac{3}{(1)}$ etc.

The number of beats to be found in each Simple Time measure is indicated by the upper figure:—

Ex: $\frac{2}{(2)}$ = 2 beats $\frac{5}{(4)}$ = 5 beats $\frac{3}{(1)}$ = 3 beats, etc.

Compound Time

If the upper figure of the Time-signature is more than once divisible by three (3) the time is **Compound**:—

Ex: $\frac{6}{(8)}$ or $\frac{9}{(2)}$ or $\frac{12}{(16)}$ etc.

In dividing the upper figure by 3, the result thus obtained shows **the number of beats** to be found in each Compound Time measure: —

Ex: $\frac{6}{(8)}$ div. by 3 = 2 beats $\frac{9}{(2)}$ = 3 beats $\frac{12}{(16)}$ = 4 beats, etc.

The lower figure of the Time-signature always stands for a *note-value.*
In Simple Time, the note-value (as indicated by the Signature) has *one* beat.
In Compound Time, the note-value has only *one-third* of a beat.
Consequently, in Compound Time, *three* (3) of the note-values (as indicated by the Signature) will be used to fill *one* beat.
When the three values are added into *one unit,* the result obtained is a **dotted-value,** or **ternary-value.**

Ex: $\frac{3}{4}$ = Simple Time, 3 beats
= 1 ♩. . . . to each beat

$\frac{9}{8}$ = Compound Time; 3 beats in the measure
= 1 ♪ to ⅓rd of beat.
3 ♪ or 1 ♩. to one beat (compound value; ternary)

The figure **1** represents 𝅝
" " **2** " 𝅗𝅥
" " **4** " ♩
" " **8** " ♪
" " **16** " 𝅘𝅥𝅯
" " **32** " 𝅘𝅥𝅰
" " **64** " 𝅘𝅥𝅱

(It is not customary to have measures containing 64th-notes per beat, as they are not sub-divisible into smaller values than 128th-notes, thus preventing rhythmic variety.)

The kind of note that fills *one beat* in a measure is called **Beat-unit.**
The kind of note that fills an *entire measure* is called **Measure-unit.**
Each Simple Time has a corresponding Compound Time, and vice versa.
To find the Compound Time from a given Simple, multiply the upper figure of Signature by 3, and the lower one by 2: —

$\frac{2}{4}$ (Simple) $\times\ \frac{3}{2}$ = $\frac{6}{8}$ (Compound) $\left(\frac{6}{8}\right)$ Six-eight Time is corresponding Compound to

$\left(\frac{2}{4}\right)$ Two-four Time.

To find the Simple Time from a given Compound, divide the upper figure of Signature by 3, and the lower one by 2: —

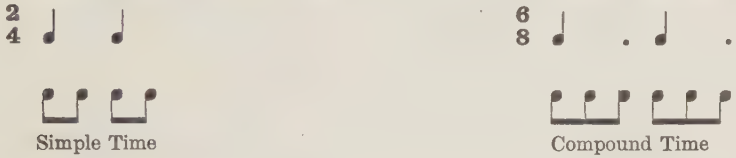
$\frac{9}{4}$ (Compound) $\div\ \frac{3}{2}$ = $\frac{3}{2}$ (Simple) $\left(\frac{3}{2}\right)$ Three-two Time is corresponding Simple to

$\left(\frac{9}{4}\right)$ Nine-four Time.

As to the notation of a Compound, the note-value representing *one* beat in the corresponding Simple (which is a simple value) must be dotted, thus becoming the correct ternary beat-unit in Compound Time.

The reverse must be done in order to transform a Compound Time into a Simple.

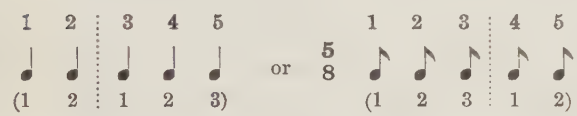
Ex: **Binary** (Simple) value per beat — **Ternary** (Compound) value per beat



Note: Five-(5) and seven-(7) beat measures were at first the result of the alternation of 2- and 3-, or 3- and 2-beat measures (for five), and the alternation of 3- and 4-, or 4- and 3-beat measures (for seven).

In these arrangements, the measures are divided by a small vertical dotted-line, so as to indicate whether the 2- or 3-beat measure comes first, etc.

Ex:



See "Pathetic Symphony" by Tchaikowski — 2nd movement.

Nine- (9) beat measures, although being naturally Compound Time measures, have been used as Simple ones; when so used, they are the alternation of 2-, 3- and 4-beat measures.

All these Times, which are considered as "exceptional" Times by the average person, are being used frequently by modern composers.

They are also often considered by them as simply 5-, or 7-, or 9-, or 10-beat measures (etc.), and not as a combination of 2-, 3-, and 4-beat measures, as previously explained.*

TIME-BEATING

In sight-singing, reading, etc., we indicate the beats by arm-motions, which help us in keeping good time.

This is called **beating-time** or **time-beating.**

Each arm motion must correspond with one particular beat in each measure.

The accented beat or *first* beat in a measure is indicated by a *downward* motion of the (right) fore-arm; and is known as **down-beat.**

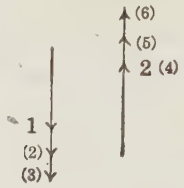
The *last* beat in a measure is indicated by an *upward* motion of the (right) fore-arm, and is known as **up-beat.**

* In connection with this chapter, we highly recommend reading the preface to "*Pièces d'Etudes sur les mesures et tonalités dites d'exception,*" by Henry Woollett. (Leduc, publisher, Paris.)

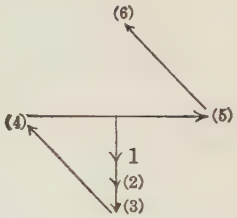
Two-beat Measures:

(Simple)

(Compound)



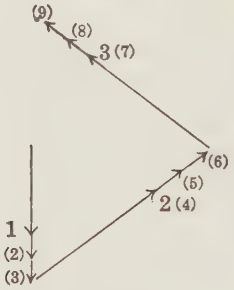
also:



Three-beat Measures:

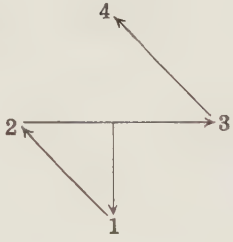
(Simple)

(Compound)

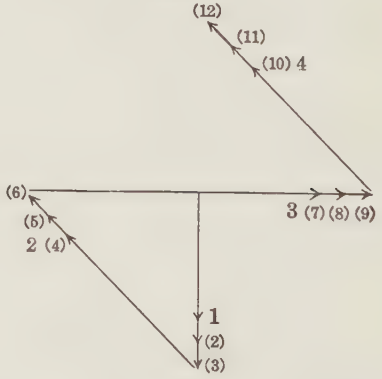


Four-beat Measures:

(Simple)

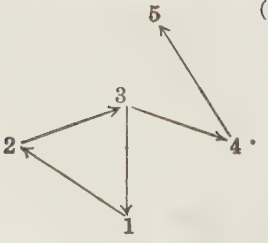


(Compound)



Five-beat Measure:

(Simple)



one = *down*
two = *across left*
three = *front*
four = *across right*
five = *up*

(Compound)

Same as Simple, with two additional smaller motions to each beat.

Diagram of Simple and Compound Time-signatures with Their Respective Beat- and Measure-units

One-beat-measures	Two-beat-measures		Three-beat measures	
	Simple	Compound	Simple	Compound
	(Beat-units)		(Beat-units)	
1/1	2/1	6/2	3/1	9/2
1/2	2/2	6/4	3/2	9/4
1/4	2/4	6/8	3/4	9/8
1/8	2/8	6/16	3/8	9/16
1/16	2/16	6/32	3/16	9/32
1/32	2/32	6/64	3/32	9/64
	(Measure-units of the above)		(Measure-units)	
	2/1	6/2	3/1	9/2
	2/2	6/4	3/2	9/4
	2/4	6/8	3/4	9/8
	2/8	6/16	3/8	9/16
	2/16	6/32	3/16	9/32
	2/32	6/64	3/32	9/64

Diagram of Simple and Compound Time-signatures with Their Respective Beat- and Measure-units (Continued)

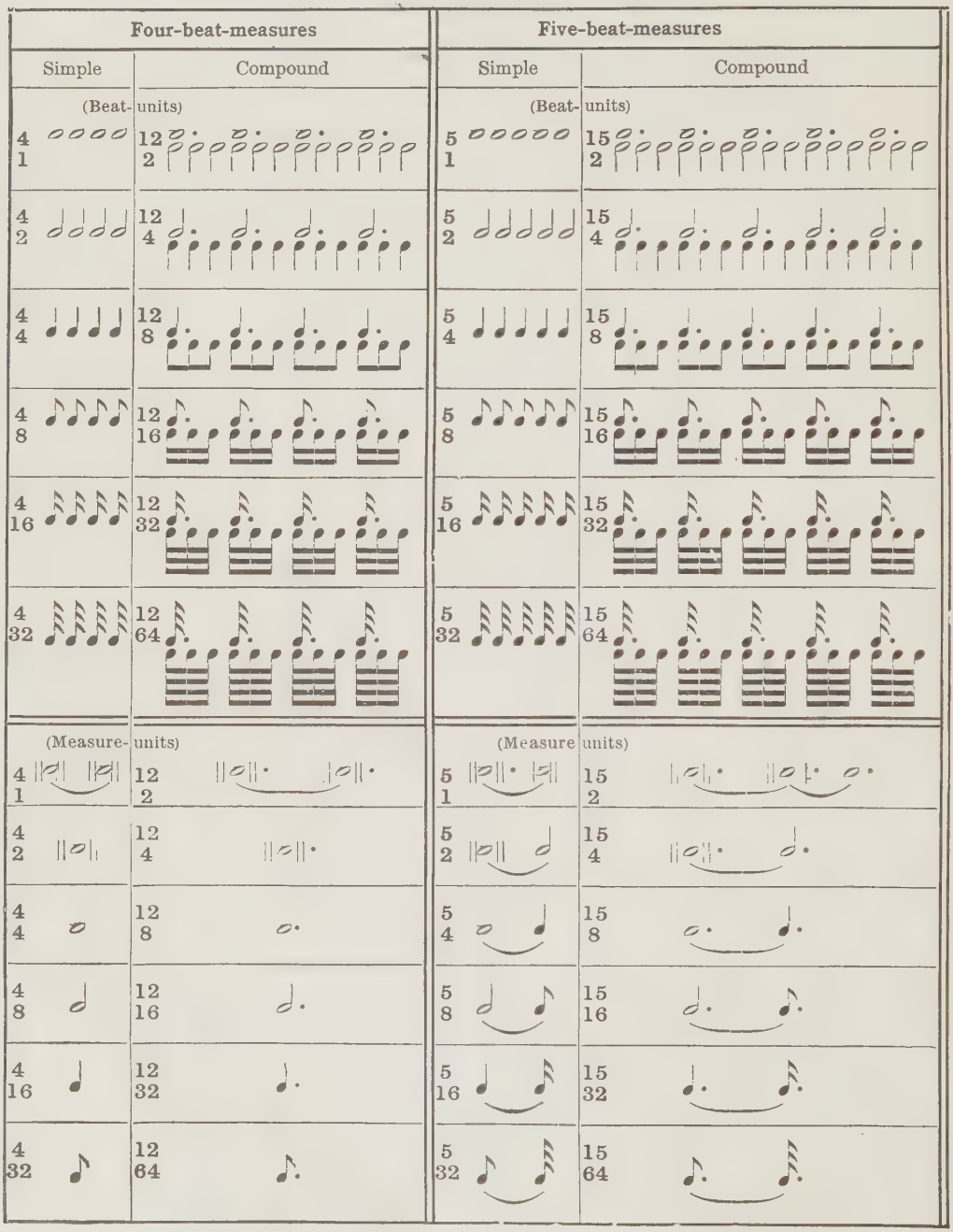
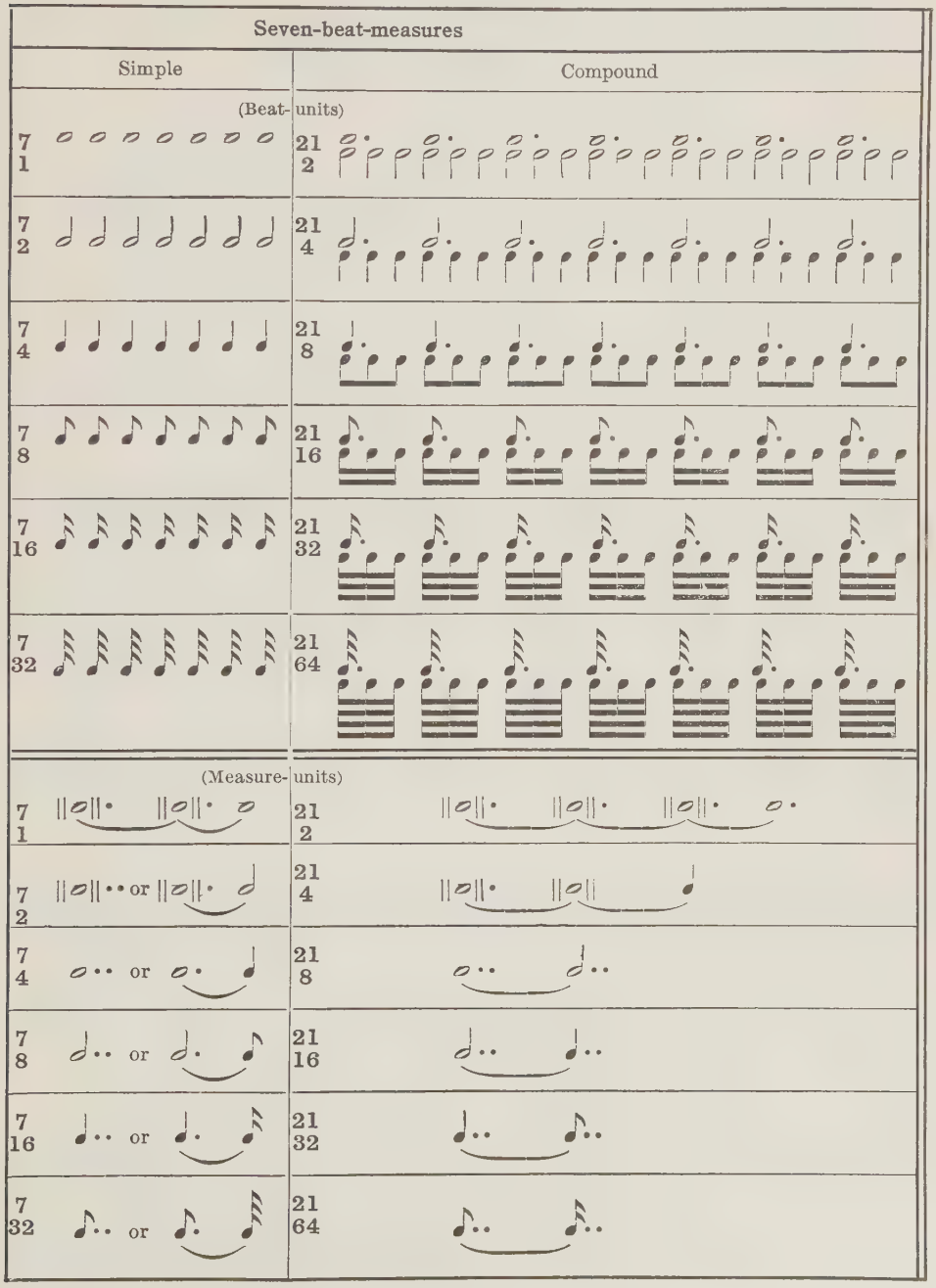
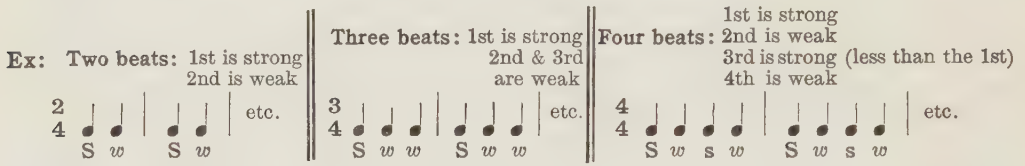
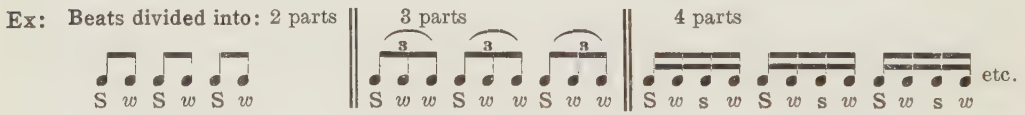


Diagram of Simple and Compound Time-signatures with Their Respective Beat- and Measure-units (Concluded)

Strong and Weak Beats; Strong and Weak Parts of Beats; Their Ensuing Rhythmical Forms

Beats in music may well be represented by words (of one or more syllables), having more or less importance according to their respective place within a measure. Their importance is indicated by strong and weak pulses, thus:



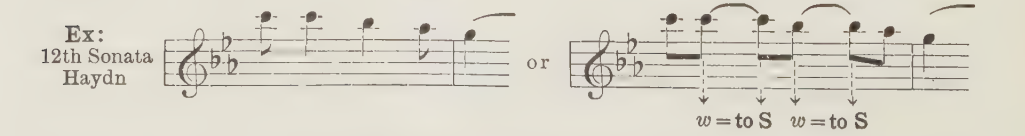
Beats may be filled with *one* note only; in that case they will be accented according to the above paragraph.

If they are filled with *several* notes (dividing each beat into 2, 3, 4 or more equal parts) each sub-division of the beat will be accented according to this rule, which is the same rule as that governing the accentuation of the beats themselves:

Rhythm **is the result of the relationship between the phenomenon of duration and the phenomenon of intensity.** (Translated from the French definition by Jean d'Udine.*)

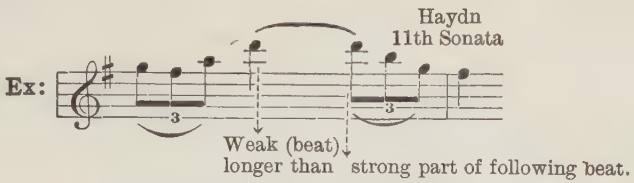
Syncopation

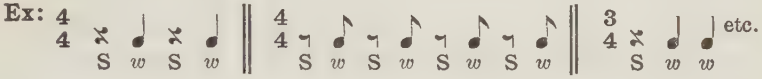
Notes performed on a weak beat (or weak part of a beat) and prolonged through the following strong beat (or strong part of beat) form a rhythmical figure called **syncopation.**

Syncopation is **regular or even,** when both parts (the weak and the strong) are of equal duration: (*w = weak,* **S = strong**)



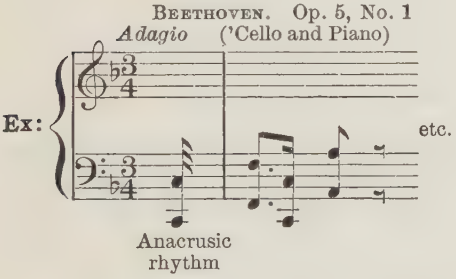
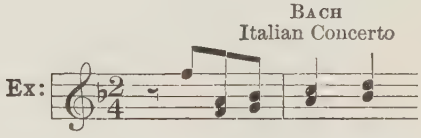
* "*Le rhythme est la résultante des rapports entre des phénomènes de durée et des phénomènes d'intensité*"; from "*Les Transmutations Rythmiques,*" (page 18), by Jean d'Udine. (Heugel, publisher, Paris, 1922.)

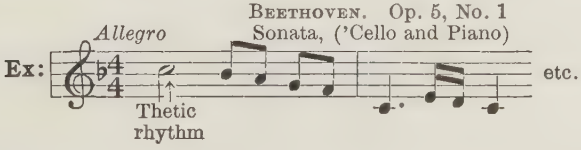
Syncopation is **irregular** or **uneven** when both parts (the weak and the strong) are *not* of equal duration:

COUNTERBEAT

Notes performed on a weak beat (or weak part of a beat), followed by a *rest* on the ensuing strong beat (or strong part of beat) form a rhythmical figure called **counter-beat** or *after-beat:*

This form is frequently met with in accompaniments.

ANACRUSIC* and THETIC* RHYTHMS

Another rhythmical form known as **Anacrusic** rhythm (*Anacrusis*), is the result of a musical phrase† beginning on any one of the beats, or parts of beats, in the measure, *other than* the first.



A **Thetic** rhythm,* on the contrary, is the result of a phrase† beginning *on* the very *first* beat of the measure. (More commonly known as "Down-beat.")

* From: *Arsis* and *Thesis*, respectively, in poetry.
See "*Des Rythmes élémentaires-Pieds antiques et anacrouses.*" (Chapter II), from "Les *Transmutations rythmiques,*" by Jean d'Udine. (Heugel, publisher, Paris, 1922); also "*Rythme musical,*" by Mathis Lussy (*Librairie Fischbacher*, Paris, 1897).

† The term "phrase" is explained on page 86.

CHAPTER FIVE

Genders — Whole and Half-tones — Scales
Tetrachords — Order of Sharps and Flats

Genders

In music there are three (3) principal genders used:

1. **Diatonic gender**
2. **Chromatic gender**
3. **Enharmonic gender**

The **Diatonic gender** determines all that is based upon the notes of diatonic scales, (page 31).

The word Diatonic is applied to all that is of *different name* and *different pitch.*

The **Chromatic gender** determines all that is based upon the notes of chromatic scales, (page 59).

The word Chromatic is applied to all that is of *same name* and *different pitch.*

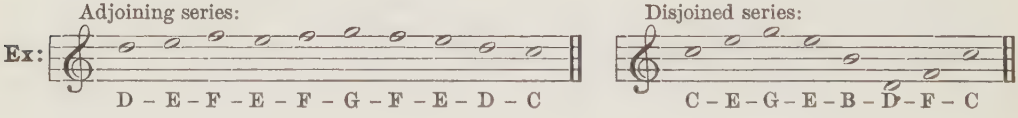
The **Enharmonic gender** determines all that is based upon the notes of enharmonic scales, (page 50).

The word Enharmonic is applied to all that is of *different name* and *same pitch.*

Adjoining and Disjoined Tones, etc.

When tones, or series of notes are named or written in successive order, they form an *adjoining* series of notes, etc.

When they are named or written in *any* order, they form a *disjoined* series of notes, etc.



Whole and Half-Tones

The word **tone** is applied to the *pitch-difference* existing between *two successive notes* upon the staff, such as from one line to the next space, or from one space to the next line, etc.

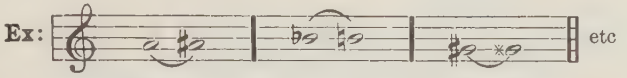
The largest pitch-difference between two adjoining notes is called **whole tone.***
The smallest pitch-difference is called **half-tone.***

* *Note:* A half-tone is the difference in sounds made by playing any key on the piano and its *next:* a whole tone is the difference in sounds made by playing any key on the piano and its *second* next.

A whole tone contains two (2) half-tones.

1. A diatonic half-tone, (occurring from a note of one name to a note of another name):

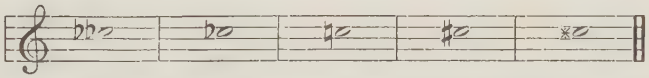
2. A chromatic half-tone, (occurring from a note of one name to a note of the **same name** with a different pitch):

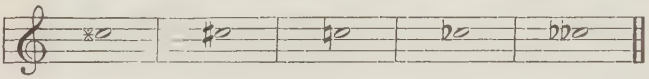


In naming the notes in their natural order, we will find that there are whole tones between: A–B., C–D., D–E., F–G., G–A.

And there are half-tones (diatonic) between: B–C., E–F.

Chromatic half-tones may be obtained by the use of **alterations.**

Writing successively five (5) notes of the same name upon the staff, and placing one of each of the alteration signs in front of each note, we will obtain a series of chromatic half-tones progressing upwards, if the alteration signs are placed thus: —

and a series of chromatic half-tones progressing downwards, if placed thus: —

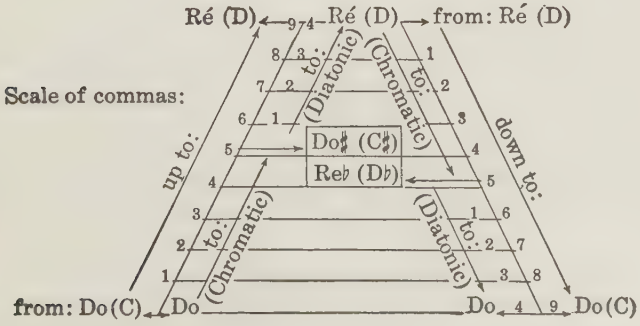


More than *one* chromatic half-tone is *never* used in a series.

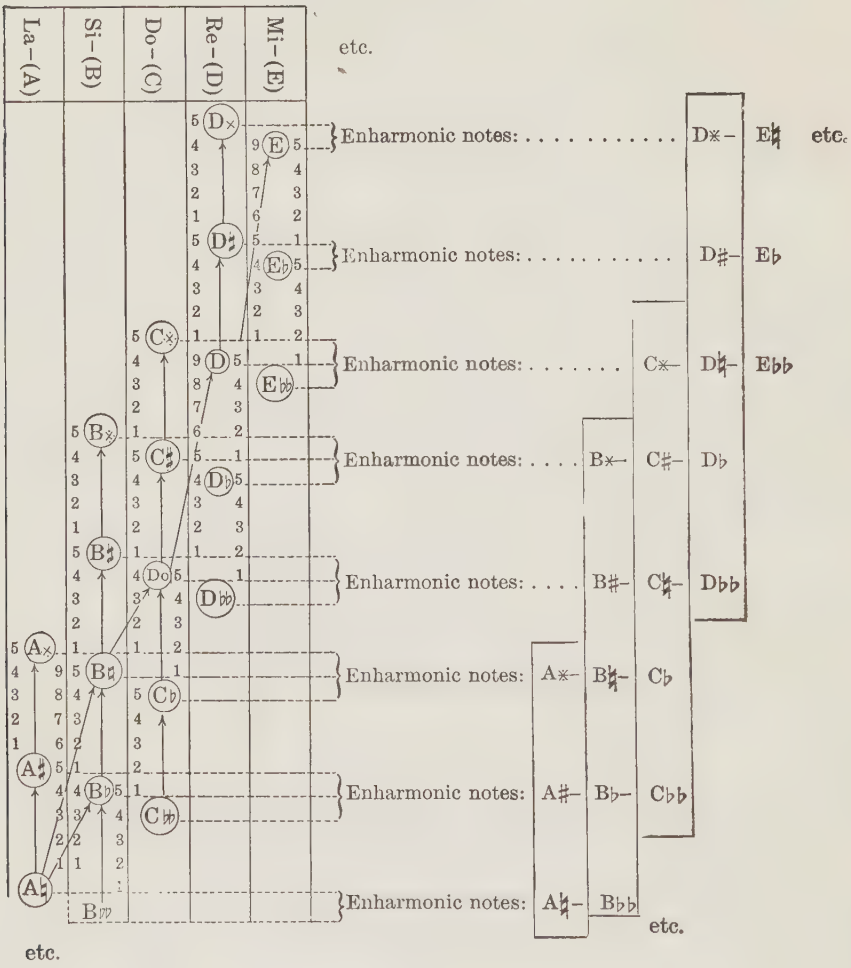
COMMAS

A whole tone can be divided into smaller parts than the half-tones. It is adopted that the smallest pitch-difference that can be detected by human ears is equal to **one-ninth** of a whole tone, which part is called: **comma.**

Therefore, there are nine (9) commas in a whole tone; the diatonic half-tone has four (4) commas, and the chromatic half-tone has five (5) commas.

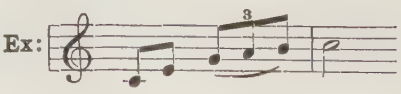


Comparative Scale of Commas in Whole Tones, Chromatic and Diatonic Half-tones and Enharmonic Notes:

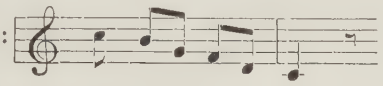


Ascending and Descending Series, Major and Minor Diatonic Scales

When tones are named, written, or performed in *forward* series, the progression is called **ascending.**

In music, the word *ascending* is applied to series of notes, etc., that proceed *upwards*, that is, from a tone to another that is *higher* in pitch.

When tones are named, written, or performed *backwards*, the progression is called **descending.**

In music, the word *descending* is applied to series of notes, etc., that proceed *downwards*, that is, from a tone to another that is *lower* in pitch.

Ex:

SCALE

A **scale** is a series of adjoining notes extending an octave, and progressing in a given order.

There are **diatonic, chromatic** and **enharmonic** scales.

A **diatonic** scale is a scale which is made of diatonic series of notes. (It has *one* note, and *only one note*, on each line and space of the staff within the octave.) It contains seven (7) tones.

Each tone in a scale is called a **degree.**

The *first* tone is the **1st degree,** the *second* tone is the **2nd degree,** etc.

Other names are also assigned to the degrees of a diatonic scale, according to their number-place in the scale.

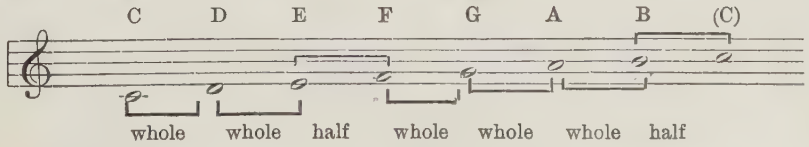
The 1st	degree	is called:	**Tonic**
" 2nd	"	"	**Supertonic**
" 3rd	"	"	**Mediant**
" 4th	"	"	**Subdominant**
" 5th	"	"	**Dominant**
" 6th	"	"	**Submediant** or **superdominant**
" 7th	"	"	**Leading-tone** (when a half-tone below the tonic)
			Sub-tonic (when a whole tone below the tonic)

There are **major** and **minor** (diatonic, chromatic and enharmonic) scales.

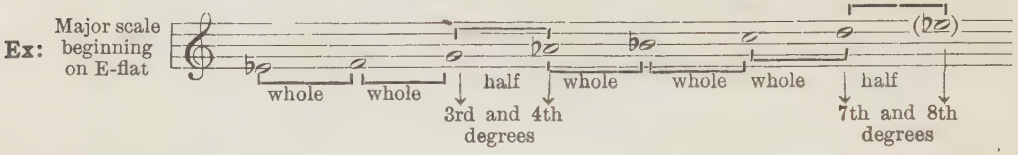
A **major diatonic scale** is a scale which has diatonic half-tones between its 3rd and 4th degrees and between its 7th and 8th (1st) degrees. All the other degrees of the scale are separated by the whole tones.

Ex:	whole	whole	half	whole	whole	whole	half
	1	2	3	4	5	6	7 (8)

Starting a scale with Do(C), and naming (or writing) a series of seven (7) adjoining notes within the octave, in diatonic order, the following series (or scale) will be obtained:

Ex:

This series, " C–D–E–F–G–A–B–(C)," has half-tones between its 3rd and 4th degrees and between its 7th and 8th degrees; it forms a **Major diatonic scale,** and is used as a model scale.

A Major diatonic scale may be built upon *any* other note besides C, after the established pattern; but when built upon any other note, alterations will be necessary in order to bring the half-tones in their proper places.



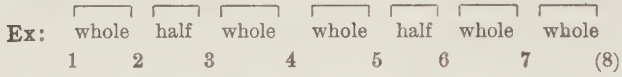
MINOR DIATONIC SCALES

There are three (3) kinds of Minor Diatonic Scales: —

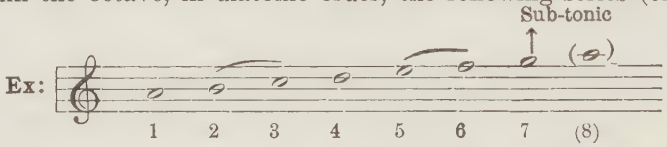
1. **Natural** (**minor diatonic scale**)
2. **Melodic** " " "
3. **Harmonic** " " "

A **Natural** (minor diatonic scale) is a scale which has diatonic half-tones between its 2nd and 3rd degrees and between its 5th and 6th degrees.

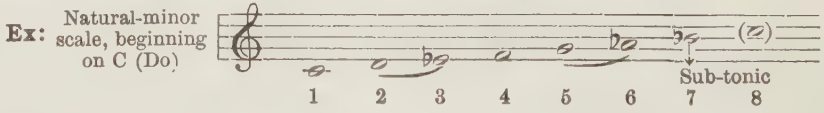
All the other degrees of the scale are separated by whole tones, thus: —

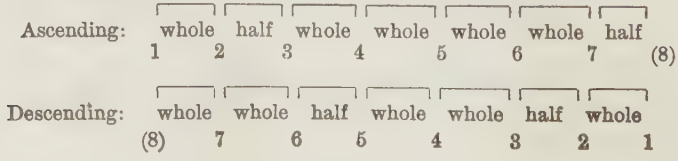


Starting a series with La(A), and naming (or writing) a scale of seven (7) adjoining notes within the octave, in diatonic order, the following series (or scale) will be obtained:

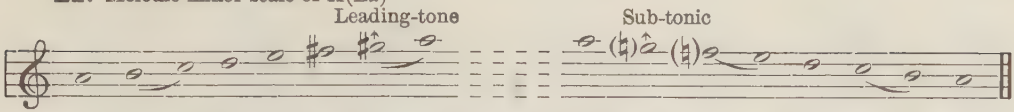


This series, " A–B–C–D–E–F–G–(A)," has half-tones between its 2nd and 3rd degrees and between its 5th and 6th degrees; it forms a (diatonic) **Natural-minor scale,** and is used as a model scale.

A Natural-minor scale may be built upon *any* other note besides A, after the established pattern; but when built upon any other note, alterations will be necessary in order to bring the half-tones in their proper places.

A Melodic (minor diatonic scale) is a natural-minor scale with its 6th and 7th degrees raised one chromatic half-tone when ascending only, bringing the half-tones between its 2nd and 3rd degrees and 7th and 8th degrees (ascending), and between its 6th and 5th degrees and 3rd and 2nd degrees (descending) thus: —

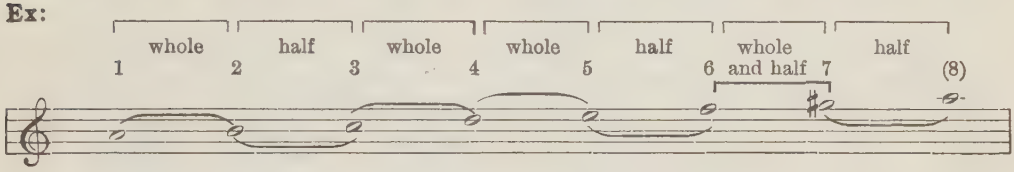

Ascending:
whole half whole whole whole whole half
1 2 3 4 5 6 7 (8)
Descending:
whole whole half whole whole half whole
(8) 7 6 5 4 3 2 1

Ex: Melodic-minor scale of A(La)

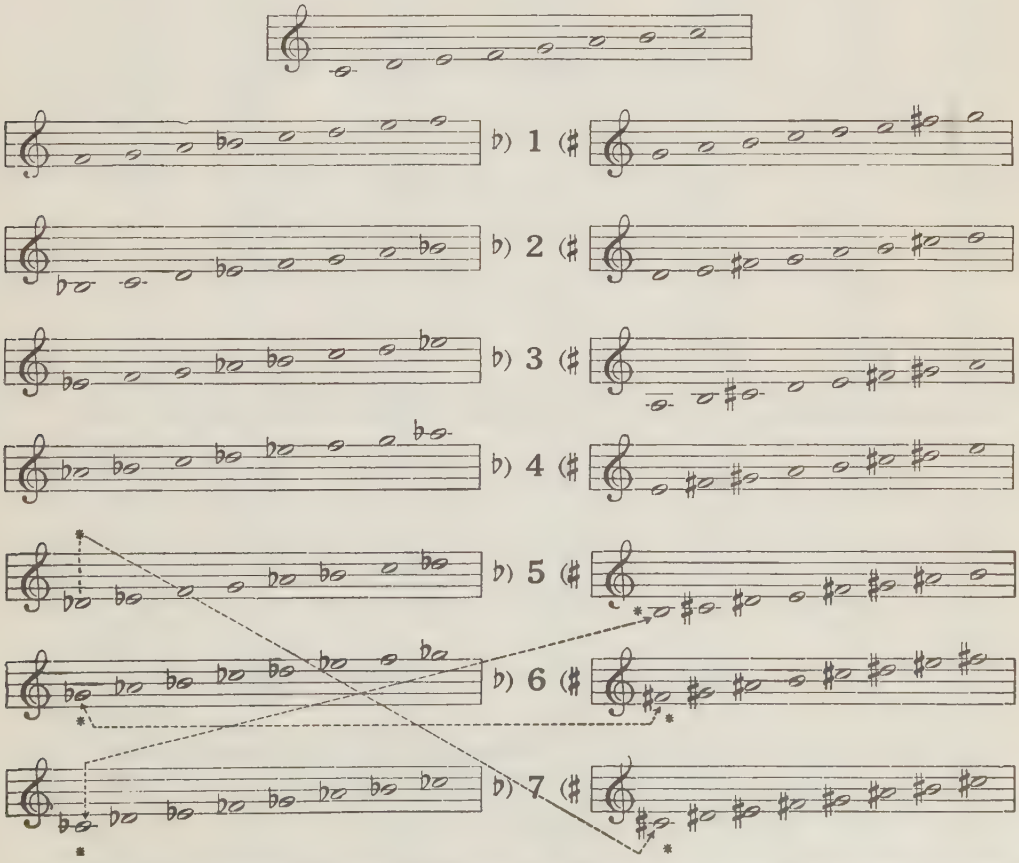


A Harmonic (minor diatonic scale) is a natural-minor scale with its 7th degree raised one chromatic half-tone (both ways), thus making an interval of one whole and a half-tone from the 6th to the 7th degree of the scale, and (three) half-tones between its 2nd and 3rd degrees, its 5th and 6th degrees, and its 7th and 8th degrees.

Ex:

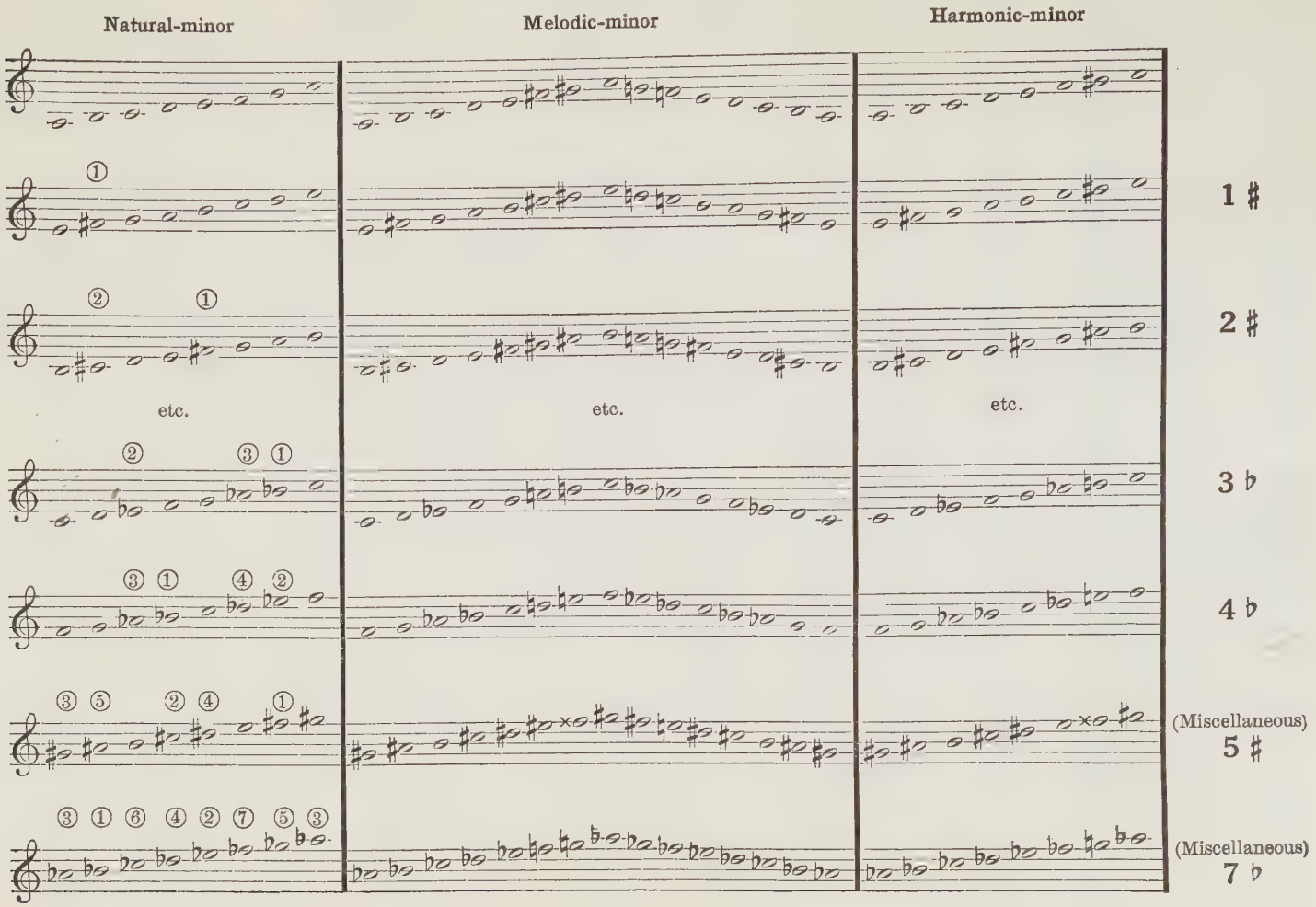


Major Scales

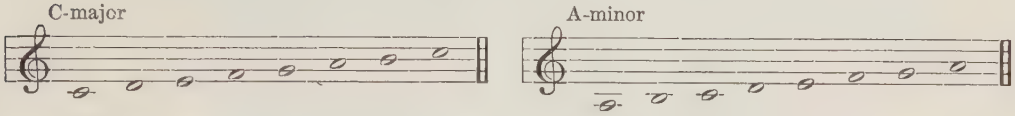


* The tonics of these pairs of scales (as indicated), **are Enharmonic notes.** — The corresponding two scales are **Enharmonic Scales.** (See page 50.)

Specimens of Natural–, Melodic–, and Harmonic–Minor Scales



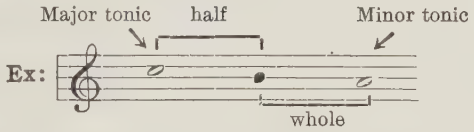
Relative Scales

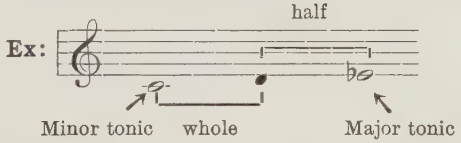
Looking at our model Major diatonic scale beginning on " Do(C)," and comparing it with our model Natural-minor diatonic scale, which begins on " La(A)," we see that both scales are made of the *same* notes.

The pair of scales, one *major* and the other *minor*, are called **Relative scales.**

For each Major scale there is a Natural-minor scale composed of the *same* notes.

For each Natural-minor scale there is a Major scale composed of the *same* notes.

The Major scale is the **Relative-major** scale to the Minor one, and the Minor scale is the **Relative-minor** scale to the Major one.

The **tonic** of the Relative-minor scale is to be found one diatonic half-tone and one whole tone below the tonic of the major scale.

The **tonic** of the Relative-major scale is to be found one whole tone and one diatonic half-tone above the tonic of the minor scale.



Key-signatures

When writing in keys* whose scales contain several sharped or flatted notes, it is the custom to indicate, in a group, the sharps or flats at the *beginning* of each staff — rather than in the music itself.

This group of alterations is called the **Key-signature,** or simply the **Signature,** and it effects every like-named note within the piece, no matter at what octave they occur.

In writing Signatures, the sharps or flats must always be written in their proper order. (See page 47.)

The Signatures should be written carefully, within the scope of the staff, and according to the Clef-sign used.

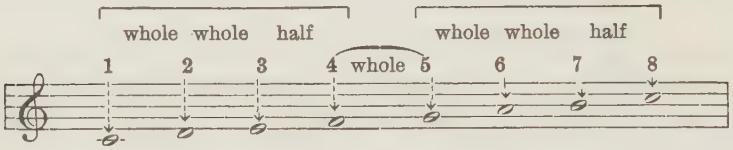
One can write directly above or below the staff (in Signatures), but *not* on the leger-lines.

The Signatures are always written according to the major scale; a minor scale (any form) has the *same* Signature as its Relative-major scale.

When writing in either the Melodic-minor or the Harmonic-minor form, the alterations of the 6th and 7th degrees should not be included in the Signature, but simply indicated in front of the proper notes, within the music itself.

* The term "Key" is explained on page 47.

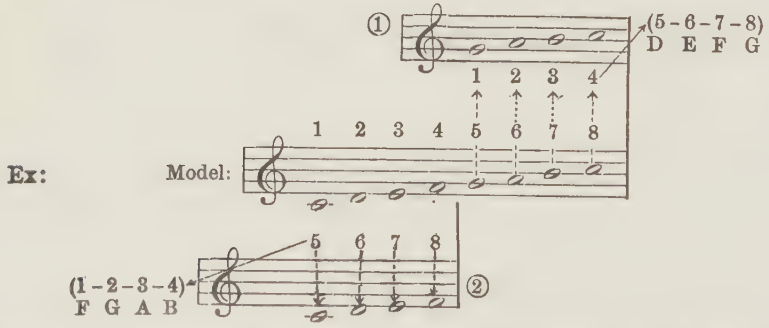
Natural Succession of Scales, and Natural Succession of Sharps and Flats

Observing the Major diatonic scale, as given in the preceding chapter, in its completed form, that is, resolved on the tonic as 8th degree, it is apparent that from the 1st to the 4th degree, and from the 5th to the 8th degree, the notes are spaced as follows: —

and that from the 4th to the 5th degree there is one whole tone.

These " half-scales " are called **tetrachords.**

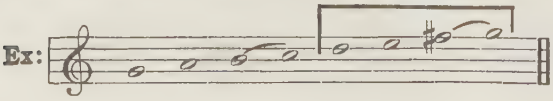
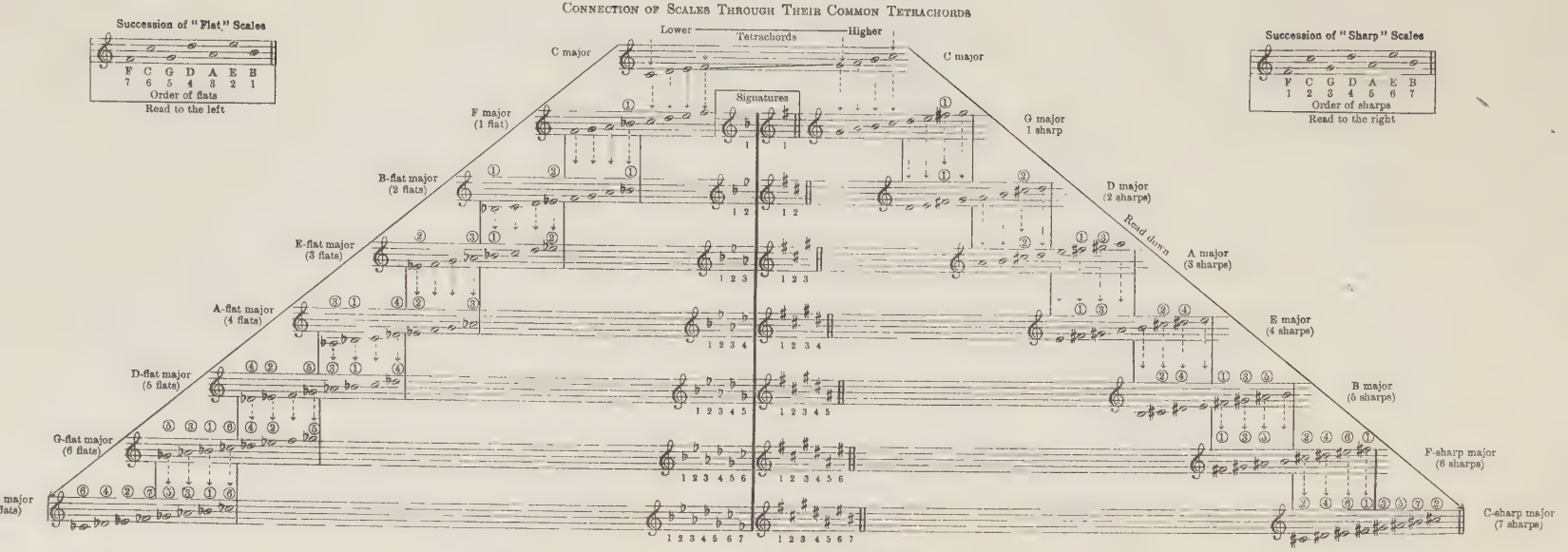
The first half-scale, formed by the lower four notes of the scale: **Lower tetrachord, and** the second half-scale, formed by the higher four notes of the scale: **Higher tetrachord.**

On account of the similarity of the two half-scales (tetrachords), one tetrachord may be used in place of the other, indifferently, in this manner: the lower tetrachord of any scale may be used as the higher tetrachord of another scale; and, reversely, the higher tetrachord of any scale may be used as the lower tetrachord of another scale.



Of course, in so doing, the new scales are not complete, and must be completed with new tetrachords, spaced according to the model ones.

In observing the example on the right ①, we find that the new tetrachord (with natural notes) is not identical with the pattern which calls for two successive whole tones and a diatonic half-tone, and the distance of a whole tone from one tetrachord to the other.

To obtain the correct spacing, we must use alterations: in this case, " raise " the 3rd note of the new tetrachord by means of a sharp, which will effect the note Fa(F):

New scale, built on Sol(G), called Scale of Sol(G) — has one sharp.

Succession of "Flat" Scales
F C G D A E B
7 6 5 4 3 2 1
Order of flats
Read to the left
Succession of "Sharp" Scales
F C G D A E B
1 2 3 4 5 6 7
Order of sharps
Read to the right
Connection of Scales Through Their Common Tetrachords
Lower
Tetrachords
Higher
Signatures
C major
C major
F major (1 flat)
G major 1 sharp
B-flat major (2 flats)
D major (2 sharps)
E-flat major (3 flats)
A major (3 sharps)
A-flat major (4 flats)
E major (4 sharps)
D-flat major (5 flats)
B major (5 sharps)
G-flat major (6 flats)
F-sharp major (6 sharps)
C-sharp major (7 sharps)
Read down

Continuing in like manner with the higher tetrachord of the scale just built, we will find that the " sharps " come in the following order: (See page 3.)

(syllables) Fa–Do–Sol–Re–La–Mi–Si
(letters) F – C – G – D – A – E – B

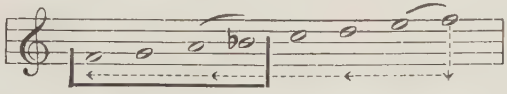
And the scales with sharps in their Signature, come in as follows:

(Major scales) G–D–A–E – B – F♯–C♯
(Relative-minor scales) E–B–F♯–C♯–G♯–D♯–A♯

In observing the example on the left ②, — preceding page, — we find that the new tetrachord (with natural notes) is not identical with the pattern which calls for one diatonic half-tone and two successive whole tones (reading backwards, to the left), and the distance of a whole tone from one tetrachord to the other.

To obtain the correct spacing, we must use alterations: in this case, " lower " the first note (reading to the left) of the new tetrachord by means of a flat, which will effect the note Si(B):

Ex:



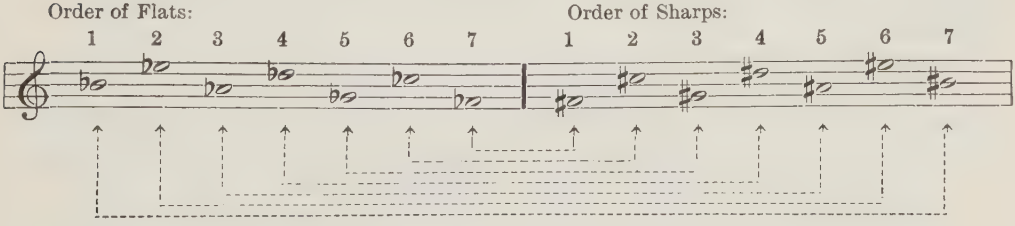
New scale, built on Fa(F), called **Scale of Fa(F)** — has one flat.

Continuing in like manner with the lower tetrachord of the scale just built, we will find that the " flats " come in the following order:* (See page 3.)

(syllables) Si–Mi–La–Re–Sol–Do–Fa
(letters) B – E – A – D – G – C – F

And the scales with flats in their Signature, come in as follows:

(Major scales) F–B♭–E♭–A♭–D♭–G♭–C♭
(Relative-minor scales) D–G – C – F – B♭–E♭–A♭



* The flats come in exactly the *opposite* order to that of the sharps.

CHAPTER SIX

Intervals

The difference in pitch between any two degrees is called an **Interval.**
An interval must always be considered as *ascending,* (counted *up*) unless the contrary is specified.

Names of intervals. — Intervals are named (or measured) according to the number of *adjoining diatonic* degrees they contain, first and last included.

An interval made of	two	diatonic	degrees	is called a	**Second** (Do-Re; Mi-Fa)
"	"	three	"	"	"	**Third** (Re-Fa; La-Do)
"	"	four	"	"	"	**Fourth** (Do-Fa; Sol-Do)
"	"	five	"	"	"	**Fifth** (Fa-Do; La-Mi)
"	"	six	"	"	"	**Sixth** (Mi-Do; Fa-Re)
"	"	seven	"	"	"	**Seventh** (Sol-Fa; Si-La)
"	"	eight	"	"	"	**Octave** (Si-Si; Fa-Fa)*
"	"	nine	"	"	"	**Ninth** (Fa-Sol; Re-Mi) and **Tenth, Eleventh, Twelfth,** etc.

A **Unison,** also known as **Prime,** is not an interval, as it means two tones of *same name* and *same pitch.* Consequently, there is *no* pitch difference between them, hence, no interval.

Simple and Compound intervals. — Intervals are simple when they *do not* exceed an octave. If they exceed an octave they are compound: — Ninth, Tenth, Eleventh, etc.

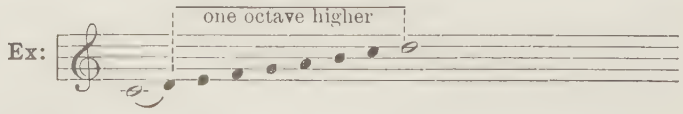
All compound intervals are derived from simple ones, being the extension of a simple interval, one or more octaves higher.

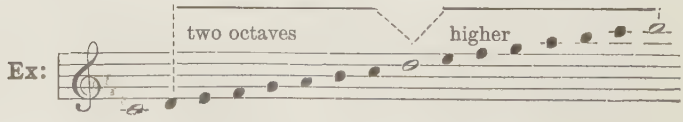
For example: By counting up nine (9) adjoining diatonic degrees from Do(C), the note Re(D) will be reached: Do, Re, Mi, Fa, Sol, La, Si, Do, Re, which is the extension

1, 2, 3, 4, 5, 6, 7, 8, 9.

of the Second:.....Do - Re ..... (Re) an octave higher.

Consequently, a **Ninth** is the compound interval of a Second, one octave higher:



A **Sixteenth** will be the two-octave compound of a Second, thus:

* See page 2.

From the foregoing it is to be remarked that, to find any compound interval that corresponds to a given simple, one must add seven (7) to the number that represents the name (or measure) of the simple interval, as many times as there are octaves to extend the simple interval to:

Ex: Simple interval.....**2nd**
1-octave compound.....2 + 7 = ...**9th**
2-octave compound.....2 + 7 + 7 = **16th**

And, to find the corresponding simple interval to a given compound, subtract seven (7) as many times as possible (so that the remainder will not be more than 8 nor less than 2).

Ex: Compound interval.....**18th**
less.....7
11
less.....7
4th (corresponding simple interval)
Answer: An **Eighteenth** is the 2-octave compound of a **4th.**

COMPOSITION (of intervals)

The sum of whole and half-tones contained between the (diatonic) degrees that make an interval, form its **composition.**

An interval of one name (general name or measurement) can be made up of different sums of whole and half-tones, thus making it larger or smaller.

For example: taking a "Second," it can be composed of a "diatonic half-tone," such as the Second from Do to Re(♭); it also can be composed of "one whole tone" (which is a larger space than the preceding) such as from Do to Re; it can be still larger if composed of a "whole tone and a chromatic half-tone" such as from Do to Re-sharp (♯).

QUALIFICATIONS (or specific name of intervals)

On account of the composition of an interval, which makes that interval smaller or larger, as the case may be, there are "size" words, or **qualifications,** that must be given to intervals of one general name, so as to specify their width.

From the smallest qualification (or size-name) to the largest we have:

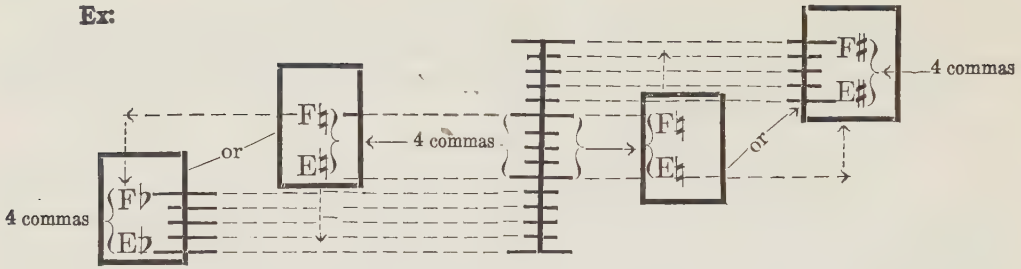
(Doubly-diminished); **Diminished**; **Minor**; **Major**; **Augmented**; **(Doubly-augmented)**, which can be given to all intervals of a *Second, Third, Sixth, Seventh,* (and all their corresponding compound intervals).

(Doubly-diminished); **Diminished**; **Perfect**; **Augmented**; **(Doubly-augmented)**, which can be given to all intervals of a *Fourth, Fifth, Octave* (and all their corresponding compounds).

All 2*nds*, 3*rds*, 6*ths* and 7*ths*, whose outside notes are *natural** notes, are *minor* or *major* intervals.

* *Note:* If the outside notes are both altered in the same manner, the interval remains the same as if formed by two *natural* notes, for the interval, as a whole, is higher or lower in pitch, in the *same proportion.* (See "commas" page 29.)

Ex:



All *4ths*, *5ths* and *8ves*, whose outside notes are natural notes (see note, page 39) are *perfect*, with two exceptions:

(1) the Fourth, from Fa to Si (F-B), is an *augmented 4th.*

(2) the Fifth, from Si to Fa (B-F), is a *diminished 5th.*

The qualifications of *major* and *perfect** are generally adopted as the standard qualifications, by which all other qualifications are given to intervals. The compositions of major and perfect intervals are also used as standard compositions.

How to Find Proper Names and Qualifications of Intervals

First, find the name of the interval by counting (up) the number of diatonic degrees it contains, first and last included, thus (Fa-Re):

Fa; Sol; La; Si; Do; **Re**
1...2...3...4...5...**6**...diatonic degrees, make a Sixth.

Looking up the composition of that Sixth, if only **one** diatonic half-tone is encountered (the rest being whole tones) the Sixth involved will be a Major Sixth.

Also refer to the following rules:

(1) *All intervals* have **one space** (whole or half-tone spaces) **less** than the *number of diatonic degrees they contain.*

(2) In the compositions of standard intervals (major and perfect) enters:—

(*a*) **No** *half-tones in major 2nds and 3rds* (whole tone spaces only).

(*b*) **One** *half-tone in perfect 4ths and 5ths* (the other spaces are whole tones).

(*c*) **One** *half-tone in major 6ths* and *7ths* (the other spaces are whole tones)

(*d*) **Two** *half-tones in perfect 8ves* (the other spaces are whole tones).

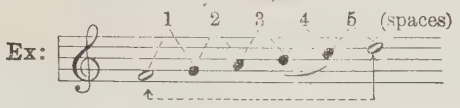
* *Note:* Some Theorists apply the qualifications of *major* and *minor* to Fourths and Fifths, and make no use of the term Perfect.

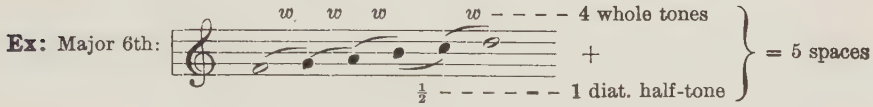
Our Perfect Fifth is the same as their Major Fifth, and our Perfect Fourth is the same as their Minor Fourth.

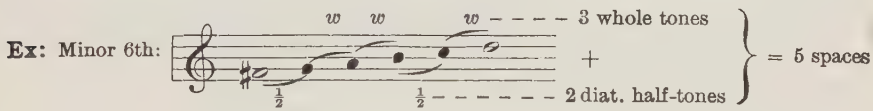
They reason that the terms "major" and "minor" signify "large" and "small," respectively; and from this they deduce that the largest Fourth is to be found between the fourth and seventh degrees of the major (diatonic) scale; therefore it is a "large" Fourth, or "major" Fourth.

The same reasoning applies to Fifths.

For example: Taking the 6th: Fa to Re (as previously); according to rule 1, there must be five (5) spaces, since the interval contains six (6) degrees, thus:



and, if only *one* of these spaces is a diatonic half-tone (the rest being whole-tones) it must be a Major Sixth (Rule 2-c.):—

If more half-tone spaces were to be found, thus reducing the number of whole tone spaces, the smaller the Sixth would be:—

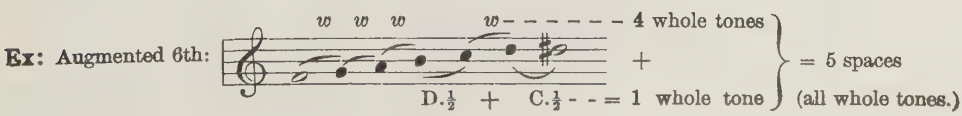


In measuring intervals, it is always a good plan to think of the notes of that interval as being *natural* notes (mentally and momentarily suppressing all alterations, if any,) and measure the interval accordingly, giving its proper qualification. Then, add the alterations (one at a time) each time, observing whether the alterations so placed widen or narrow the interval.

For example: if asked what interval there is from Fa♯ to Si♭.; suppress (mentally) the sharp of Fa and the flat of Si, leaving Fa-Si, which we know is an augmented 4th (see page 40). Sharping Fa will narrow the interval one half-tone (since it raises the pitch of Fa, thus bringing it nearer to Si). Fa♯ to Si will be the next smaller size 4th: *perfect*. Flatting Si will narrow it one more half-tone (since it lowers the pitch of Si, thus bringing it still nearer to Fa♯), next smaller size 4th which equals a diminished 4th.

Thus: Fa♯ to Si♭ is a *diminished 4th*.

If, in addition to the *standard compositions*, more " chromatic " half-tone spaces were found, thus increasing the number of whole tone spaces, the interval becomes larger (for each chromatic half-tone added):



INVERSIONS

To invert an interval is to change the respective position of the notes forming it; (making its lower note the higher one, or vise versa).

The simple intervals only can be inverted, viz:

When inverted:	a 2nd	becomes a	7th....	(*total*:	9)	
"	"	3rd	"	6th....	"	"
"	"	4th	"	5th....	"	"
"	"	5th	"	4th	"	"
"	"	6th	"	3rd	"	"
"	"	7th	"	2nd	"	"
"	"	an 8ve	"	unison.	"	"

Referring to the above, it is to be observed that, by adding the figure representing the given interval to that of its inversion, the total is invariably *nine* (9).

Hence, to find the inversion of a given interval, subtract the figure that stands for said interval from 9 and the remainder will give its inversion.

Qualifications of Inversions

When inverted, intervals bear the opposite qualification to that of their original position, viz.:

doubly-diminished*	intervals become	*doubly-augmented**
diminished.....	" "	*augmented*
minor.....	" "	*major*
major.....	" "	*minor*
augmented.....	" "	*diminished*
doubly-augmented*	" "	*doubly-diminished**
perfect.....	" **remain**	*perfect*

It is sometimes much easier to find an interval through its inversion.

Melodic and **Harmonic** Intervals. — When two (2) tones are sounded in *succession*, they form a **Melodic** interval:

Ex: etc.

When sounded *simultaneously*, they form a **Harmonic** interval·

Ex:

Harmonic intervals are divided into two (2) classes:

1. **Consonances** (or *consonant intervals*)
2. **Dissonances** (or *dissonant intervals*)

Consonant intervals are divided by some theorists into two (2) classes, thus:

1. **Perfect consonances**: perfect fifths and octaves;
2. **Imperfect consonances**: major thirds and sixths and minor thirds and sixths.

(*All other intervals being dissonances*)

* The terms " Sub-diminished " or " Twice diminished " are also used in place of *doubly-diminished;* and the terms " Over-augmented " or " Twice augmented " in place of *doubly-augmented.*

By some other theorists, they are divided into four (4) classes, thus:

1. **Perfect consonances**: perfect fifths and octaves;
2. **Imperfect consonances**: major thirds and sixths and minor thirds and sixths;
3. **Mixed consonances**: perfect fourths;
4. **Leading** (or *attracting*) **consonances**: augmented fourths and diminished fifths.

(*All other intervals being dissonances*)

COMPOSITION OF COMPOUND INTERVALS*

When compound intervals are involved, find what is the *simple* interval they derive from, thus at once finding what their qualification should be. To the composition of the simple interval, add the composition of perfect octaves: two (2) diatonic half-tones and five (5) whole tones as many times as the interval was compounded.

"A **25th**." (from D to G♯):—

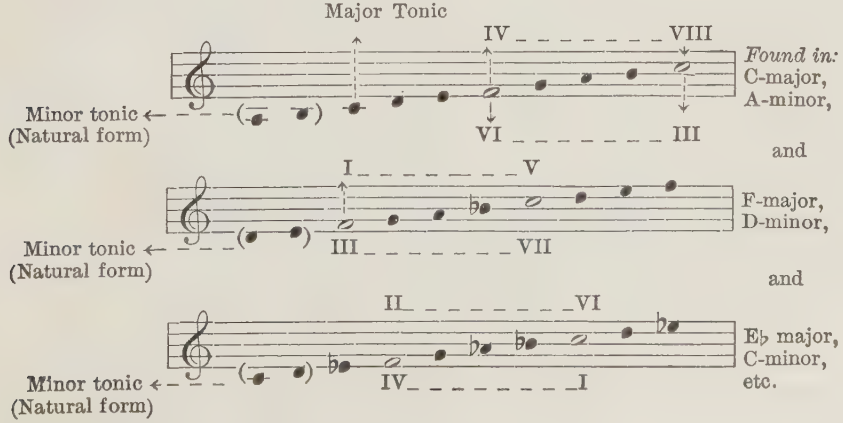
Ex: Compound interval 25th
less 3 times 7 21
simple interval 4th

The 25th is the 3-octave compound of a 4th.

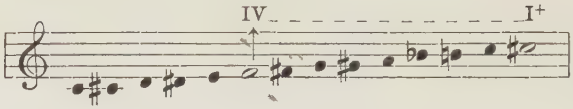
The fourth, D–G♯, is an augmented 4th . . . three (3) whole tones plus three (3) times composition of perfect octaves (each: five (5) whole tones and two (2) diatonic half-tones) =
Augmented 4th . . . . . 3 whole tones
plus . . . . . 15 whole tones
18 whole tones and six (6) diatonic half-tones

(Eighteen (18) whole tone spaces and six (6) half-tone spaces: total, 24 spaces — see rule 1, page 40.)

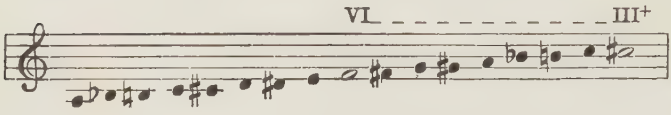
An interval is said to be *diatonic* when it is formed by notes that belong to a diatonic scale. It is said to be *chromatic* when it is formed by notes found in a chromatic scale.

Ex: Diatonic Interval: (F to C)

Major Tonic
IV _ _ _ _ _ _ _ VIII
Found in:
C-major,
A-minor,
Minor tonic ← (Natural form)
VI _ _ _ _ _ _ _ III
and
I _ _ _ _ _ _ _ V
F-major,
D-minor,
Minor tonic ← (Natural form)
III _ _ _ _ _ _ _ VII
and
II _ _ _ _ _ _ _ VI
E♭ major,
C-minor,
etc.
Minor tonic ← (Natural form)
IV _ _ _ _ _ _ _ I

* See pages 38 and 39.

Ex: Chromatic Interval: (F to C♯)

Found in:
C-major (chromatic)

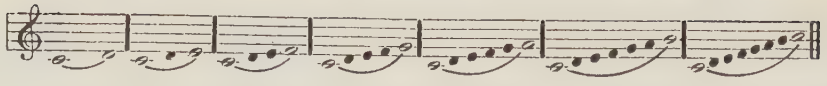
and

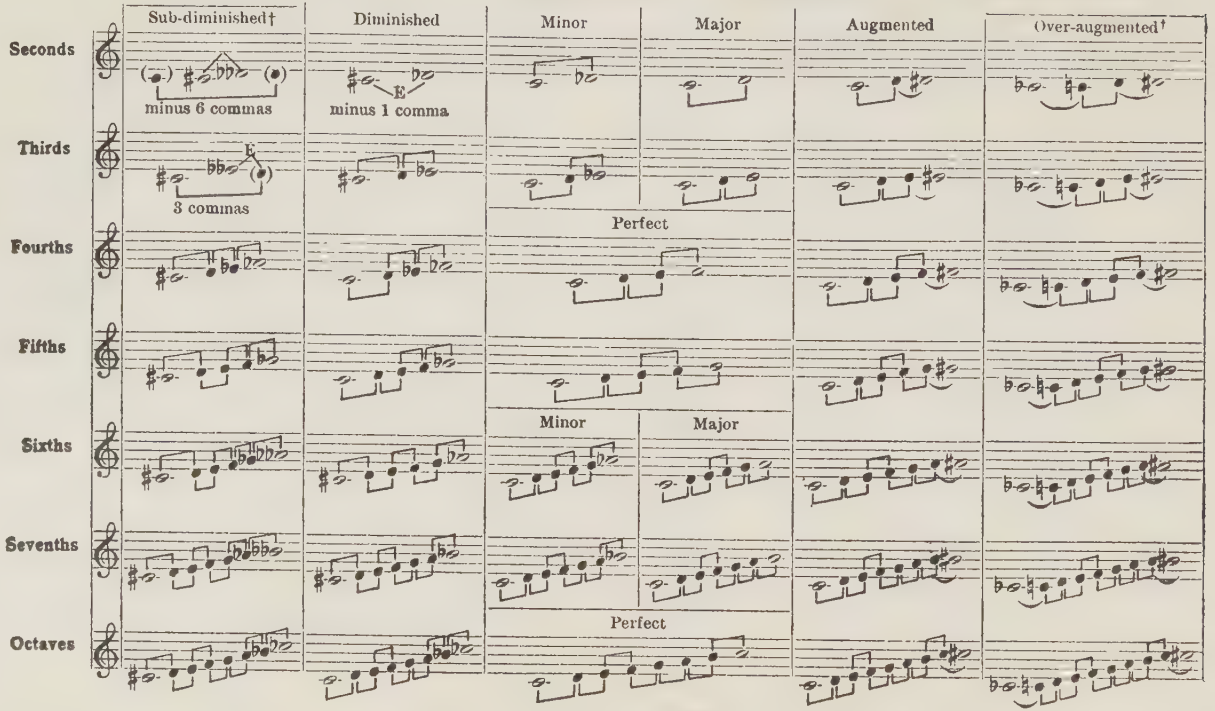


A-minor, (chromatic)
etc.

DIAGRAM OF SIMPLE INTERVAL EXAMPLES

Major or Perfect Simple Intervals with Do(C) as Lower Tone*



⌐¬ = diatonic half-tones. ⌴ = whole tones. ⌣ = chromatic half-tones. E = enharmonic notes. ⌃ = crossing over: minus.

* These intervals are given on the staff (above) as specimens. Note that when the upper note is *raised*, or the lower note is *lowered* (or both), the interval is **Larger**. When the upper note is *lowered*, or the *lower* note is *raised* (or *both*), the interval is **Smaller**.

† These intervals are not practicable in music writing. They are mentioned here as memorandum for "Theory."

CHAPTER SEVEN

Triads; Derivation and Formation of the Scales

Two notes sounding simultaneously form a **harmonic interval.** Three, or more, notes sounding simultaneously (arranged according to certain laws) form a **chord.**

There is a great variety of Chords, and the study of these belongs to the domain of **Harmony.**

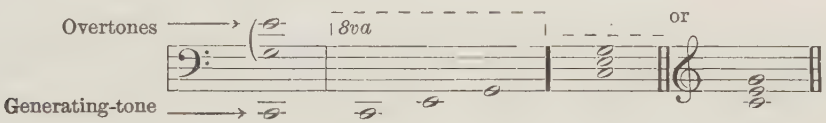
Of first importance are the **Triads.** A Triad is a chord of three (3) notes arranged in thirds, one above the other, (or capable of being so arranged.)

Any "sonorous body" upon being made to vibrate, either by tapping, blowing, or plucking, will produce a **tone,** called **Generating-tone,** together with other less audible-tones, known as **Harmonics** or **Overtones.**

The most conspicuous among these are a **perfect 12th,** and a **major 17th** above the Generating-tone.

These two compound intervals (12th–17th) when reduced to simple ones, give a perfect fifth and a major third above the Generating-tone.

In sounding these three notes together as a chord, we obtain a **Perfect Major Triad:**

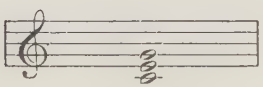


Perfect major triads contain all the tones necessary to form a Diatonic Major Scale. Yet, *one* triad only would not suffice, since it only contains three notes, and a diatonic scale requires seven (7) adjoining diatonic degrees (see page 31).

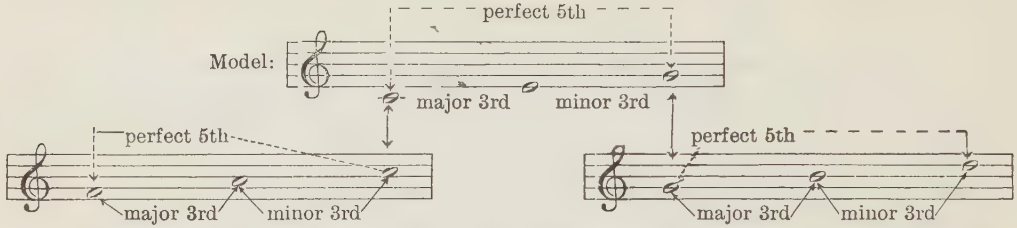
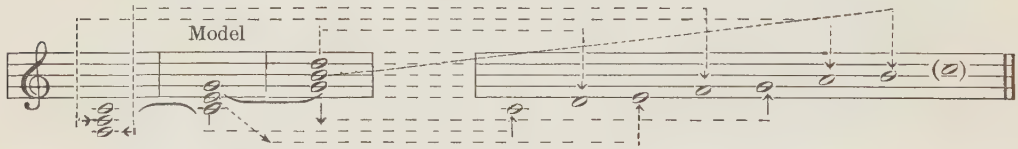
The triads necessary to form a complete major scale can be obtained by observing the following conditions: —

(1) The triads will be similar in their construction to the first one.
(2) They will be related to the first one by at least *one* common note.
(3) They will contain *no* tones chromatically related to one of the notes that form the first triad.

Consequently, if the Generating-tone is Do(C) the Overtones will be Sol(G)— perfect 12th — and Mi(E) — major 17th — producing the following perfect major triad:

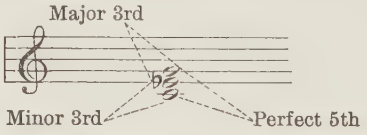


This triad: Do-Mi-Sol (C-E-G) will serve as a model, and as first triad formed, after which the other necessary triads will be made.

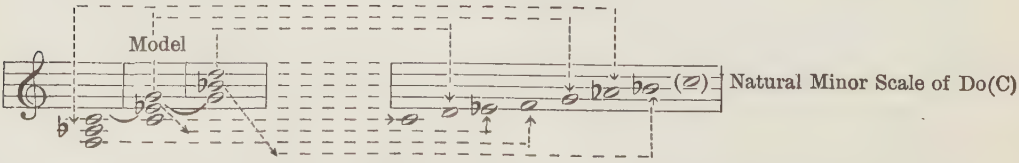
The only other triads possible to use, fulfilling the requirements (of the foregoing), are:

Do(C) being the *first* Generating-tone, it becomes the Tonic of the scale; writing seven (7) adjoining notes, and starting with Do(C), we find that they are to be found in the three triads given above, thus completing the major diatonic scale of Do (C)-major.

The first note of each chord is its **root.** As there are three chords, there are three roots, which occur on the first, fourth, and fifth degrees of the scale formed.

Going back to the first triad found (C-E-G), it is to be remarked that it is made of two successive thirds: from Do to Mi.....major third, and
from Mi to Sol.....minor third.

By changing the order of these thirds, that is, having the *minor* third first and the *major* third last, we will obtain the following triad:



which will form a perfect *minor* triad, so called because the 2nd note of the triad is a minor third above the root.

Proceeding as with the major triads, but this time, using minor triads, after the model: C-E♭-G, we will find the three necessary triads to form the minor scale of Do(C)-minor.

In both the major and minor scales of Do(C), the roots of the triads are the same. The only difference is in the thirds of these triads, which are major in the major scale and minor in the minor scale.

Tonal and Modal Notes

The triads that contain the notes of any major and minor scale are three (3) in number, and their respective roots are the **Tonic, Subdominant** and **Dominant** of the scale. These three roots are called **Tonal-notes,** on account of their importance in determining the Tonality or Key.

The thirds of the triads (on the Tonic and the Subdominant), which are a *major* third above their roots in major, and a *minor* third, in minor, are called **Modal-notes,** (the **Mediant** and **Submediant** in the scales) on account of their importance in determining the Mode.

Key; Tonality; Mode

A **key** is: "The series of tones forming any given major or minor scale, considered with special reference to their harmonic relations, particularly the relation of other tones to the tonic, or key-note."

The term **tonality,** as contrasted with the word **key,** is distinguished by its broader significance and wider scope." (Dictionary of Musical Terms, — Theo. Baker.)

The term **mode** determines whether a musical composition is built upon the notes of a major or minor scale. In reference to the scales themselves, it determines the manner in which the half-tones occur in the scale.

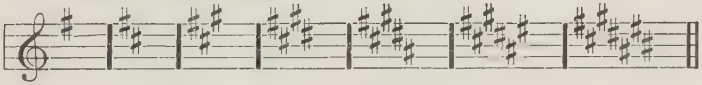
Modern tonality has two modes: Major and Minor,— formerly the *Aeolian* and *Ionian* modes from the Greek tonality, upon which ours is based.

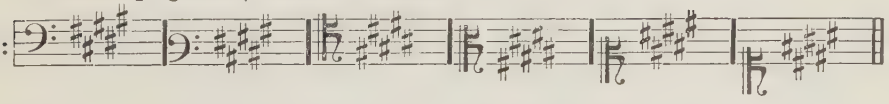
Signature Writing

In building up scales, either through triads or tetrachords, we found that alterations were to be used in certain scales, and that these alterations were generally grouped at the beginning of the staff, after the clef-sign, thus forming the Key-signature. (See page 35.)

Sharp signatures are written according to the order of sharps, always beginning with Fa(F), and always within the limits of the staff. (The clef-sign in use should be observed.)

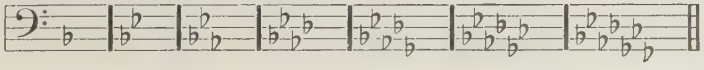
With G-clef on the 2nd-line

Ex:

Five-sharp signature, with other different clefs

Ex:

Flat signatures are written according to the order of flats, always beginning with Si(B) and always within the limits of the staff. (The clef-sign in use should be observed.)

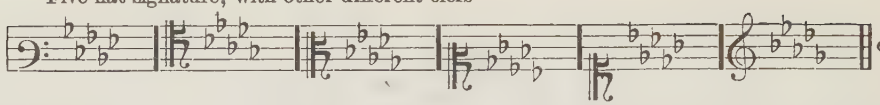
With F-clef on the 4th-line

Ex:



Five-flat signature, with other different clefs

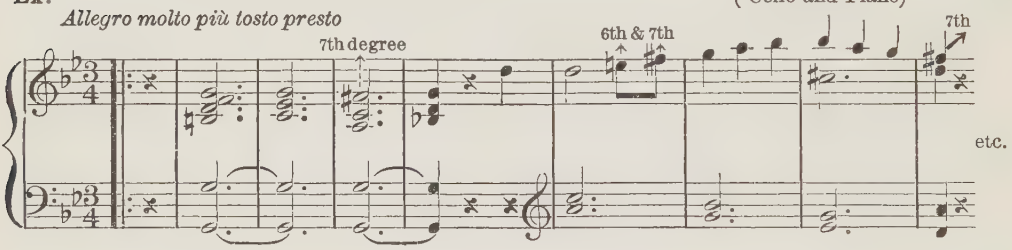
Ex:



The alteration of the 7th degree in the harmonic form of minor, or of the 6th and 7th degrees in the melodic form, do not pertain to the key-signature, and must *not* be included in it.

Each time the 6th or 7th degree is altered, according to the form used, its proper alteration must be placed before it, as an accidental.

Ex:

BEETHOVEN, Op. 5, No. 2
Sonata in G-minor
('Cello and Piano)

If the process of forming scales by means of common tetrachords or common triads be continued long enough, it will become necessary to introduce *double-sharps* and *double-flats*. These will follow the order of the sharps and flats.

Such keys are not used, except in the case of momentary modulations.*

If a permanent modulation into such a key was brought about, the enharmonic equivalent of the key is substituted.

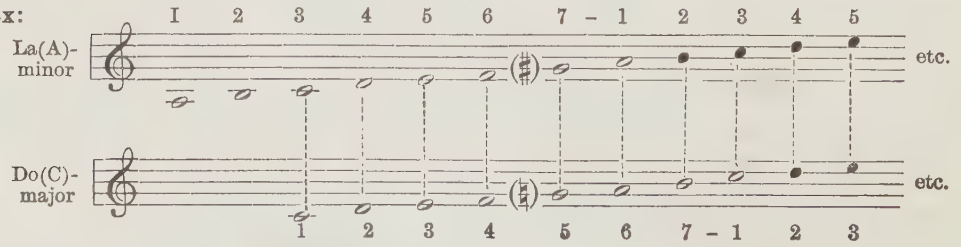
In naming Signatures containing double-sharps or double-flats, state the number of double-sharps or double-flats only, as the single sharps or flats are understood.

RELATIVE SCALES OR KEYS

Two scales, whose tonics are at a distance of a minor third, one being a minor scale and the other one a major scale, are known as **Relative scales.**

In comparing the two scales formed, La-minor and Do-major, note that both are made of the *same tones* (as they derive from their respective chords), with the exception of the 7th degree, in minor (harmonic), which is *raised* in order to give it its real character as a Leading-tone: —

Ex:



* The term " Modulation " is explained on page 57.

Every major scale has a Relative Minor scale, the tonic of which is a minor third *below* that of the major scale; and, conversely, every minor scale has a Relative Major scale, the tonic of which is a minor third *above* that of the minor scale.

Ex: Do(C)-major: Tonic is Do(C); a minor third *below* Do is La (A), consequently, Do(C)-major and La(A)-minor are *related* or **Relative** scales.

The key-signature of a minor scale or key is the *same* as its Relative major, and is written in the same way.

To find out whether a musical composition is in the major or minor mode, —

First: Find what the major and minor tonics are, as are indicated by the Signature.

Second: Observe whether or not in the first four or last four measures, the dominant of the major scale is raised. If *not*, the composition is in the *major mode;* if it *is raised*, the composition is in the *minor mode.*

It occasionally happens, however, that the dominant of the major scale is not raised, and yet the composition is in minor. In this case, observe if the composition begins or ends with one, two, or the three notes of the major or minor tonic triads.

Remarks.—Major Mode:

(*a*) **To find the number of sharps in a key: —**
Find the leading-tone, then count up the sharps in their order, up to the leading-tone's name, which is the last sharp in the Signature.

(*b*) **To find the number of flats in a key: —**
Count the flats, up to the name of the tonic, plus one; the tonic being next to the last flat in the Signature.

Minor Mode:

(*c*) *To find the Signature of a minor key, find its Relative major key, then proceed as explained in* (*a*) *and* (*b*)*;* or,

(*d*) *Find the super-tonic, then count up the sharps in their order, up to the super-tonic's name, which is the last sharp in the Signature.*

(*e*) *For the flats, find the sub-mediant, then count the flats in their order, up to the sub-mediant's name, which is the last flat in the Signature.*

(*f*) Major keys having a natural or sharped-note as tonic, *contain sharps in the Signature; except* Do(C)-natural major, which has *no* sharps nor flats in the Signature, and Fa(F)-natural major, which has one flat, Si(B)-flat.

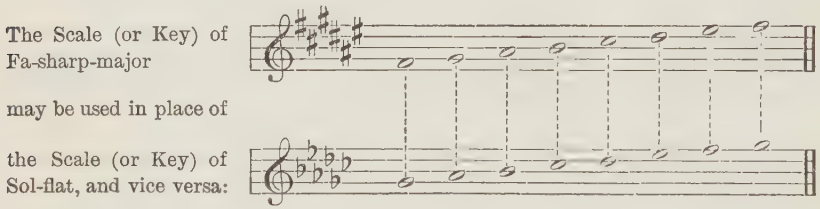
(*g*) Major keys having a flatted-note as tonic, *contain flats in the Signature.*

ENHARMONIC SCALES AND KEYS

According to the connection of scales through their common tetrachords, we found that there were: —

	Seven	(7) major scales with sharps in the Signature.
	Seven	(7) major scales with flats in the Signature.
	One	(1) major scale with no sharps nor flats.
Total of	Fifteen	(15) major scales and their Relative
	Fifteen	(15) minor scales:
	Thirty	(30) scales in all.

By means of " Enharmony " (see Genders, page 28) this number of thirty (30) can be reduced to twenty-four (24) for practical purposes, as some of the scales may be used with either notation, since they are practically the same in sound.

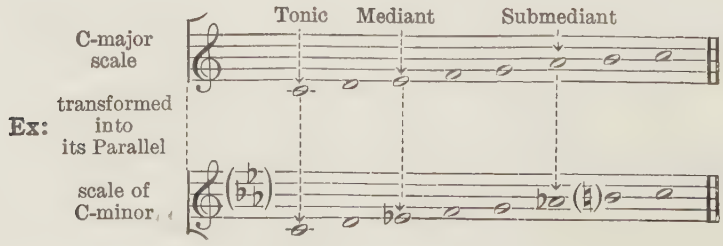
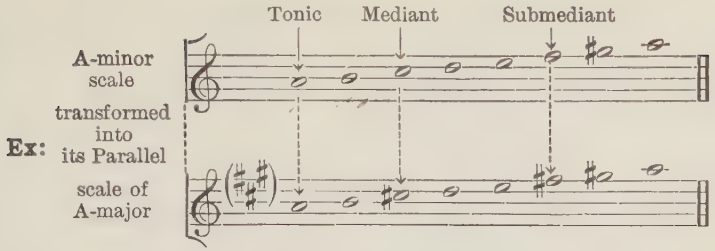
The system of Enharmonic scales is particularly practicable on Tempered instruments (See page 33); for example:—

Note:—The number of sharps or flats in the Signature of a given key, when added to that of its enharmonic equivalent, gives a total of twelve (12) alterations.

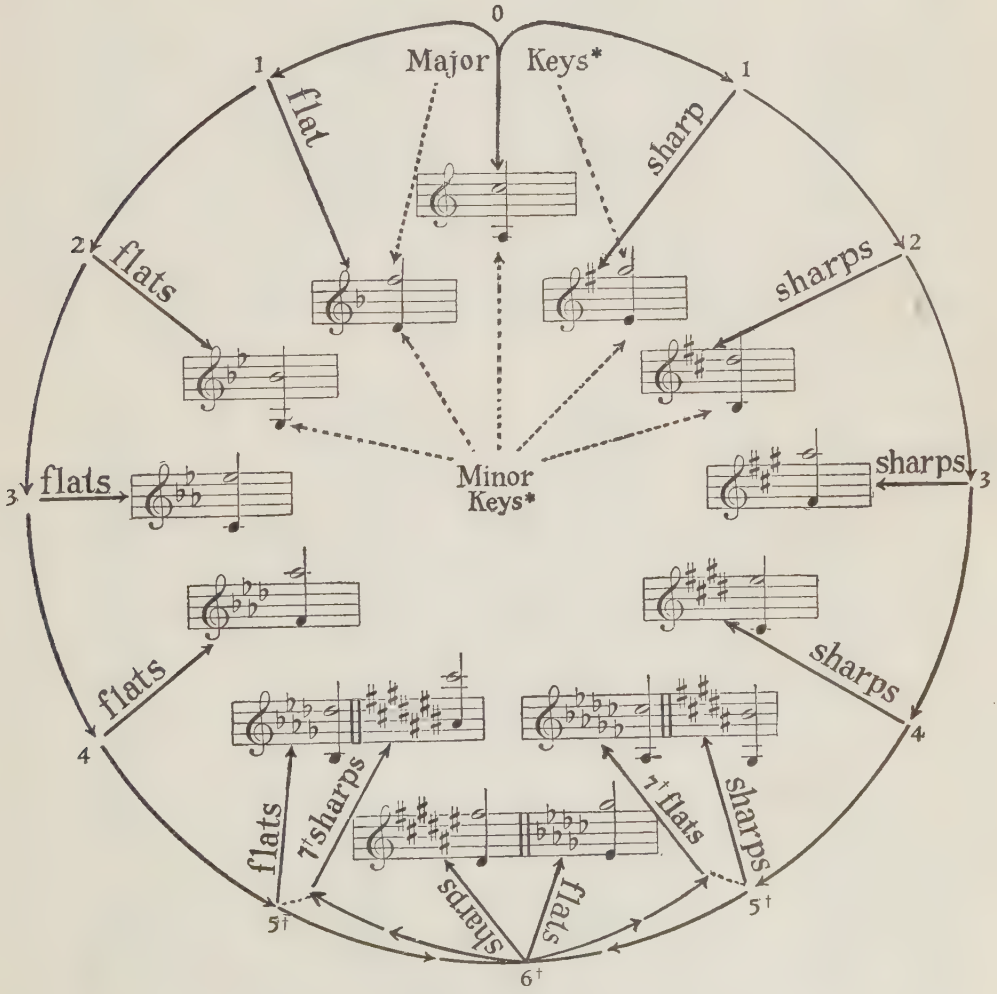
By subtracting the number of sharps or flats from 12, the number of sharps or flats in the enharmonic scale may be found.

The alterations contained in two enharmonic scales are generally of the opposite kind, that is, if one scale contains sharps in its Signature, its enharmonic will contain flats, and vice versa.

PARALLEL SCALES

Two scales having the *same* tonic, one of them being a major scale and the other one a minor scale, are called **Parallel Scales.**

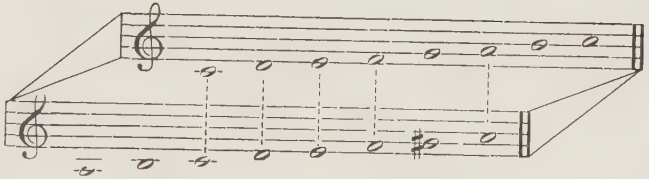
Any major scale may be transformed into a (Parallel) Harmonic-minor scale by *lowering* its mediant (3rd) and submediant (6th) *one chromatic half-tone*, and *vice versa.*

Note: The number-difference (or total) in the Signatures of Parallel scales is of three (3) alterations

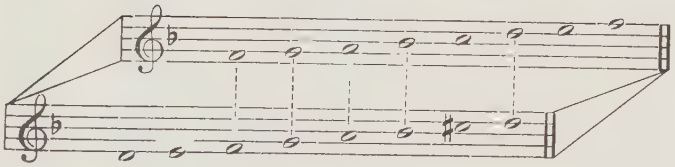


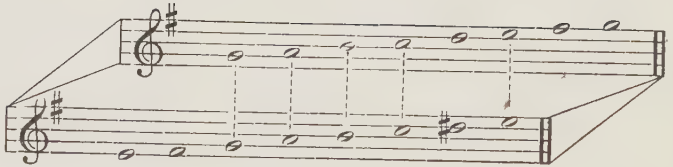
* All the Major Keys are here represented by half-notes, and all the Minor Keys by quarter-notes.
† Enharmonic Keys.

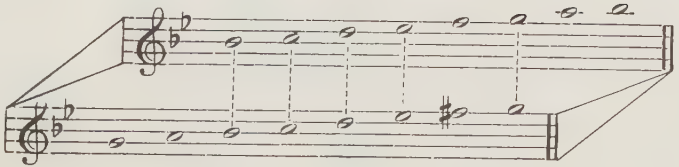
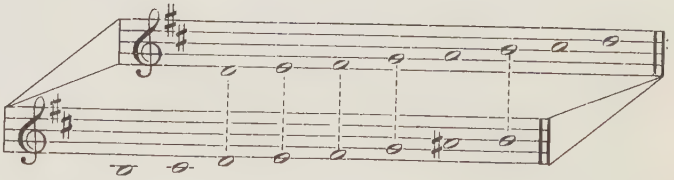
RELATED SCALES

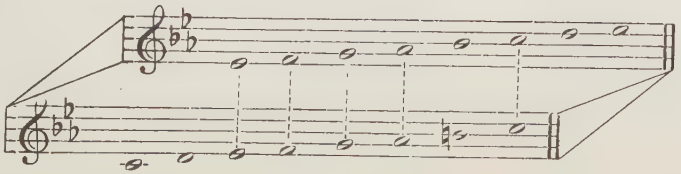
With Proper Key-signatures

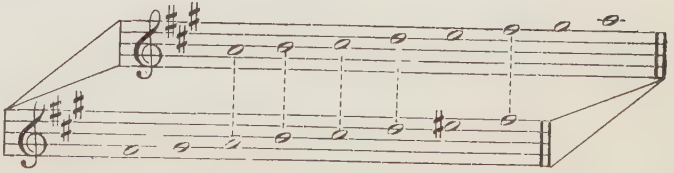
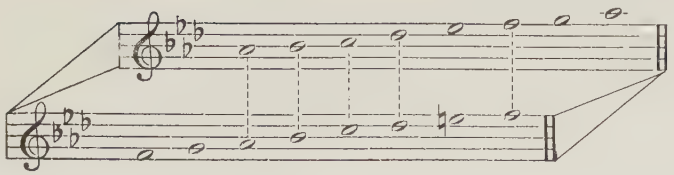


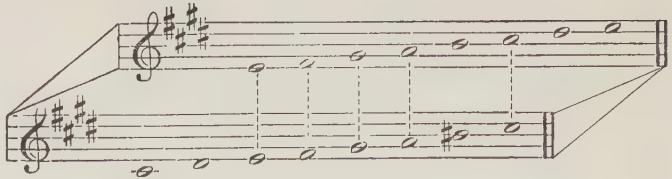
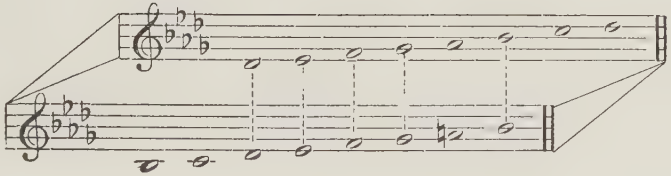
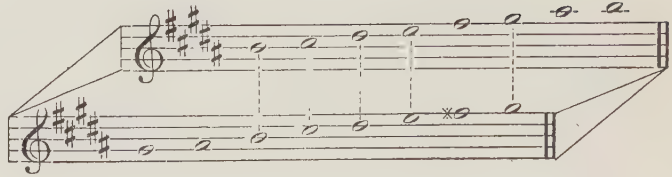
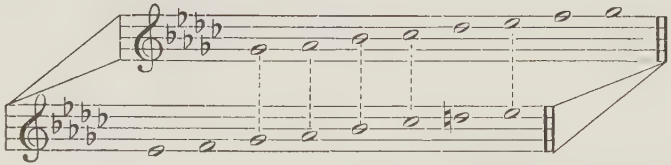
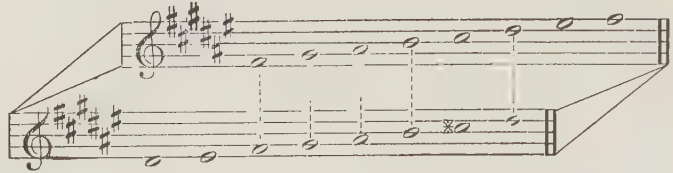


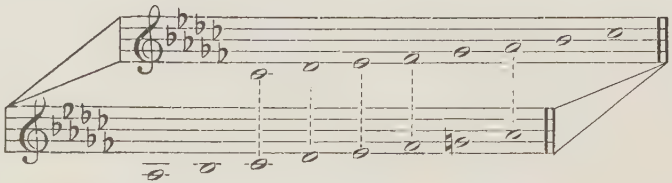












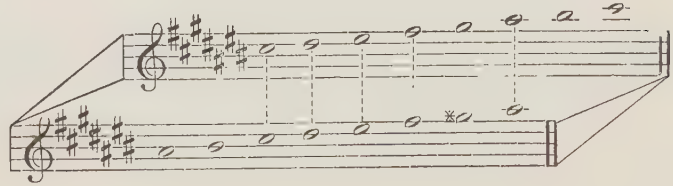


DIAGRAM OF INTERVALS ON EACH DEGREE OF THE SCALES

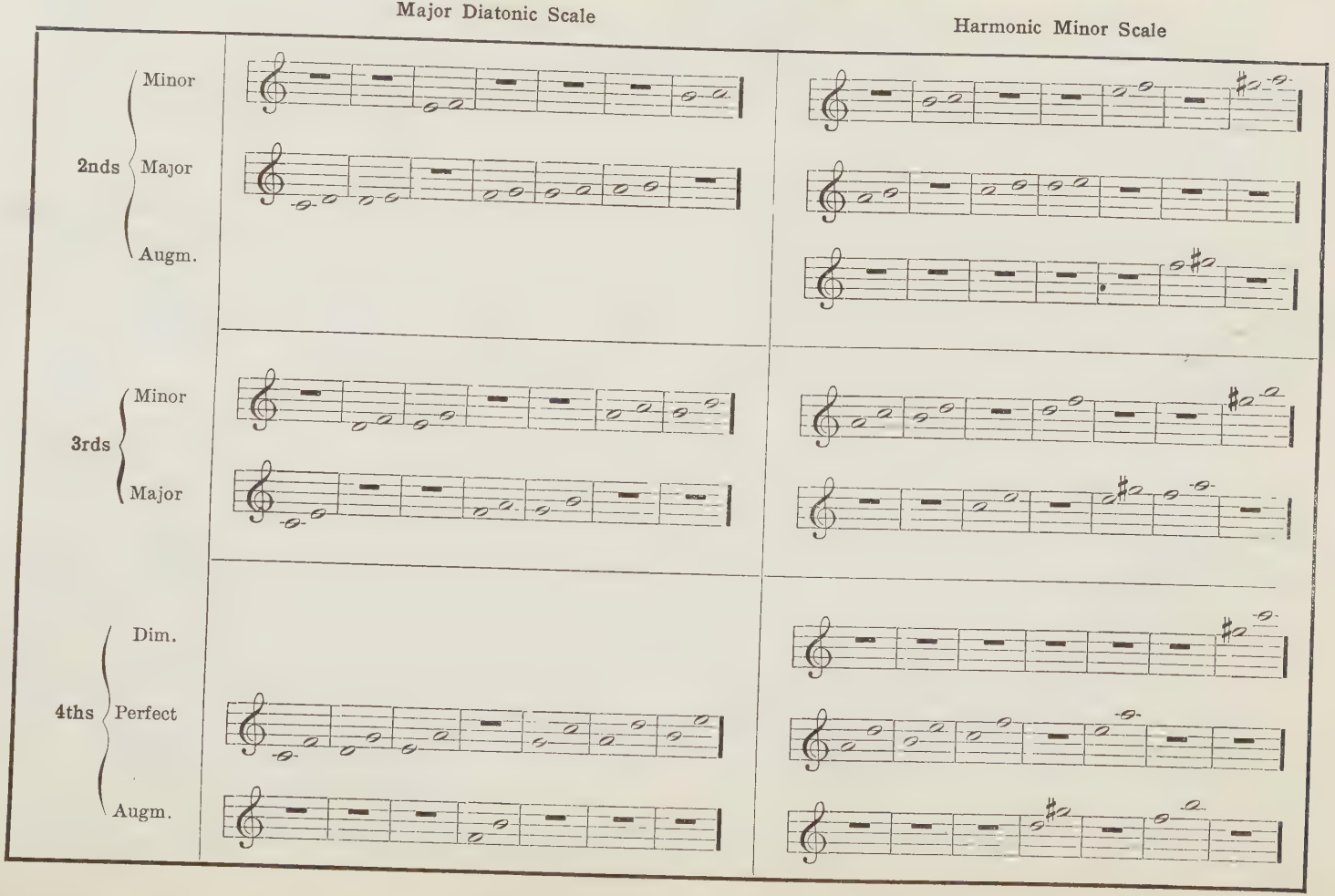
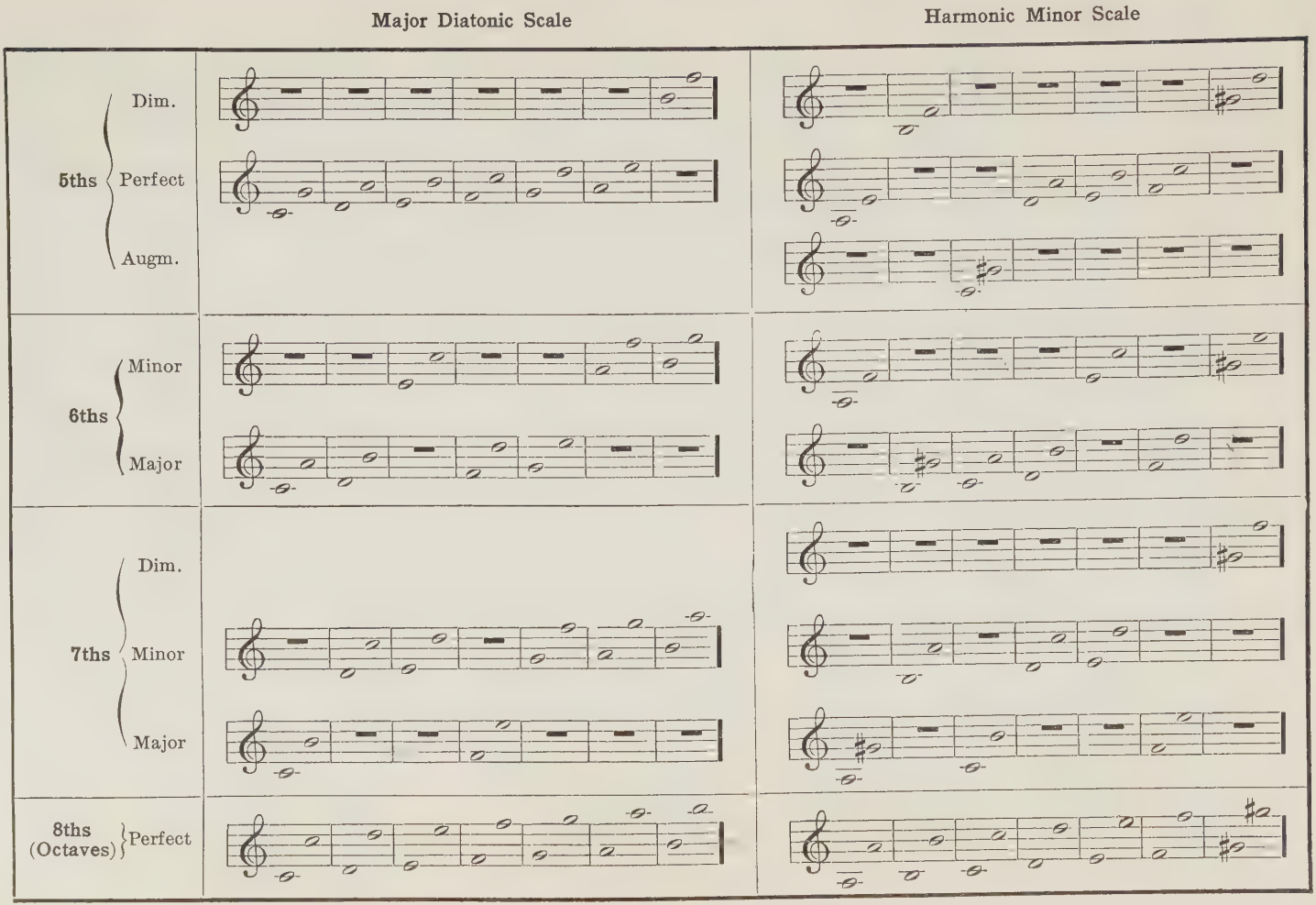


DIAGRAM OF INTERVALS ON EACH DEGREE OF THE SCALES (Concluded)



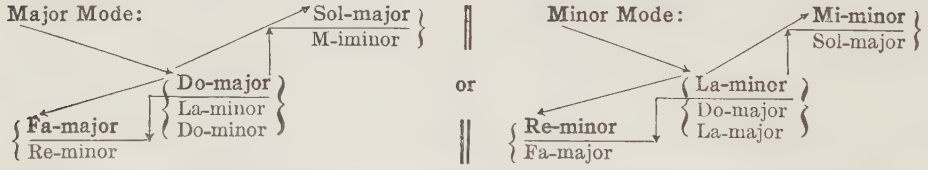
CHAPTER EIGHT

Neighboring Scales and Keys; Modulation; Formation of Chromatic Scales (Major and Minor Modes)

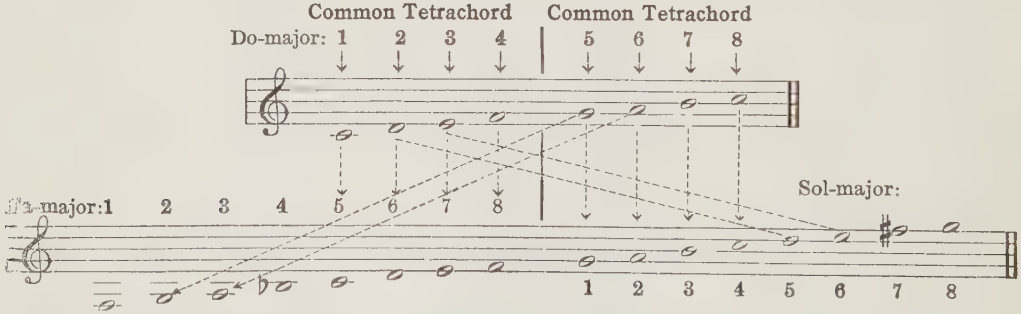
Three (3) major (or minor) scales (or keys) whose tonics are each at a distance of a perfect fifth from each other, are known as **Neighboring scales** or **keys** (together with their respective relative scales); so called because any two (2) scales out of the three have from five (5) to six (6) notes in common.

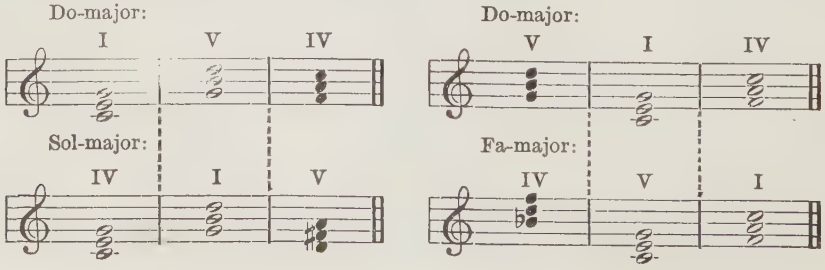
If we take the key of Do(C)-major, for example, the scales of which the tonics are a perfect fifth apart from that of Do, respectively are: Sol(G)-major and Fa(F)-major, and the respective relative scales of each of these are La(A)-, Mi(E)- and Re(D)-minor. The parallel scale to the first one chosen should also be considered as one of the Neighboring scales.

Consequently, for any one first established (or found, or chosen) key, there are six (6) Neighboring scales or keys:



The similarity of two (2) scales of one mode at a distance of a perfect fifth can also be observed through their common tetrachords, or through their generating triads, thus:



Comparing the generating triads:—

Modulation

To **modulate** is to pass from one key or mode into another, either momentarily or permanently.

As long as the notes of a melody keep their relationship to the *first* tonic (principal tonic or key) there is *no* modulation; if this relationship is broken through accidentals not pertaining to the principal established key, there *is* a modulation.

The study of **Modulation** really belongs to the domain of "**Harmony.**" However, we will here give the first elementary principles of Modulation.

The number of possible modulations is practically without limit. The first principles of modulation generally are those to the Neighboring Keys (see page 56).

According to the chapter on Neighboring Keys, we have observed that to any one principal key, there are six related or neighboring keys. Consequently, considering that the principal key is Do(C)-major, its neighboring keys to which one may modulate are:

(1) its Relative.....La-minor
(2) its Parallel.....Do-minor
(3) perfect fifth above.....Sol-major
(4) perfect fifth below.....Fa-major
(5) Relative to Sol-major.....Mi-minor
(6) Relative to Fa-major.....Re-minor

Note: In modulating into any minor mode, the Harmonic form of the minor scale is generally used, as it is more characteristic than any of the other forms. Consequently, one will always have to watch for the raised 7th degree of the minor scale into which one is modulating.

The accidentals that will be necessary in order to bring a modulation to any of the six neighboring keys will be those which make up the Signatures of said keys.

(1) *Do-major has no sharps, no flats.* The characteristic alteration of La-minor will be that of its 7th degree: Sol-sharp.
(2) The alterations of Do-minor will be: Mi-flat and La-flat (and Si-natural).
(3) The alteration of Sol-major will be: Fa-sharp.
(4) The alteration of Fa-major will be: Si-flat.
(5) The characteristic alteration of Mi-minor (besides its Signature of Fa-sharp) will be Re-sharp.
(6) The characteristic alteration of Re-minor (besides its Signature of Si-flat) will be Do-sharp.

In detecting modulations, one must of course be very familiar with the Signatures, and watch constantly for the alterations of the neighboring keys, and for the final resolution into the key involved. (As a matter of fact, when a modulation has taken place and has resolved into the new key, *that new key must then be considered as being the principal key for the time being;* that is why we say modulations are practically without limit.)

In considering the list of alterations for modulations into the neighboring keys to Do-major as effecting certain degrees of the scale of Do-major, the same results are obtained by observing the same rules, even if the principal key is another one than Do. We will remark that: —

(1) If the **Dominant** of the major principal key is *raised*, we modulate to its **Relative.**

(2) If the **Mediant** and **Submediant** of the major principal key are *lowered*, we modulate to its **Parallel.**

(3) If the **Subdominant** of the major principal key is *raised*, we modulate to a perfect fifth above.

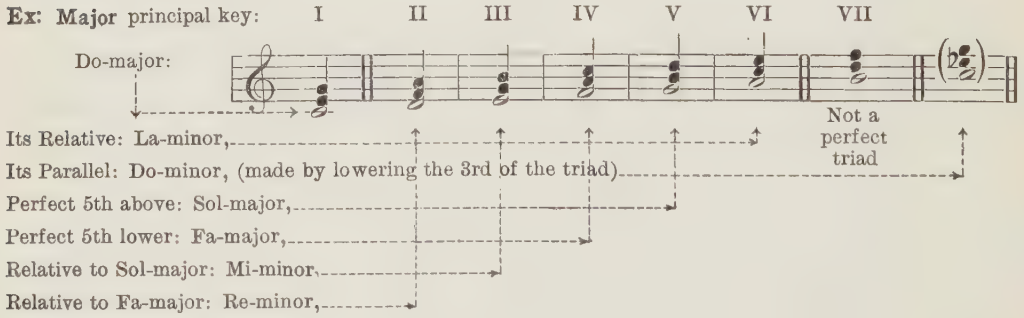
(4) If the **Leading-tone** of the principal key is *lowered*, we modulate to a perfect fifth below.

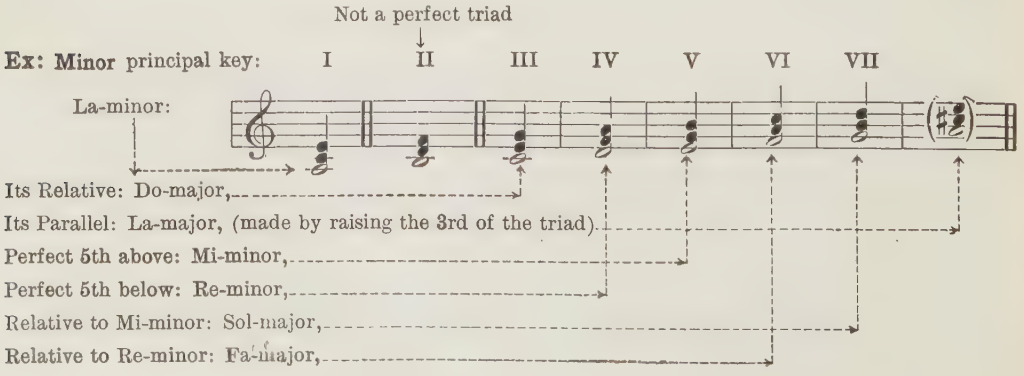
(5) If the **Supertonic** and Subdominant of the principal key are *raised*, we modulate to the Relative of the perfect fifth above Tonic (or to the Mediant-minor-key).

(6) If the **Tonic** is *raised* (and the Leading-tone is *lowered*), we modulate to the relative of the perfect fifth below Tonic (or to the Supertonic-minor-key), etc.

Another system can be used for remembering the neighboring keys to a principal one. It consists in taking each degree of the principal scale, and building *perfect* triads on each of these degrees, provided these triads contain the diatonic notes of that scale. Each root of these triads corresponds to the tonic of one of the neighboring keys, and the mode of the triad involved tells the mode of that key.

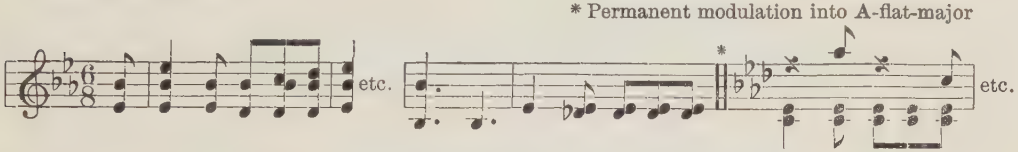
Note: If the principal key is minor, one must use the degrees of the Natural-minor scale as roots of the triads.


Ex: Major principal key: I II III IV V VI VII
Do-major:
Not a perfect triad
Its Relative: La-minor,
Its Parallel: Do-minor, (made by lowering the 3rd of the triad)
Perfect 5th above: Sol-major,
Perfect 5th lower: Fa-major,
Relative to Sol-major: Mi-minor,
Relative to Fa-major: Re-minor,


Not a perfect triad
Ex: Minor principal key: I II III IV V VI VII
La-minor:
Its Relative: Do-major,
Its Parallel: La-major, (made by raising the 3rd of the triad)
Perfect 5th above: Mi-minor,
Perfect 5th below: Re-minor,
Relative to Mi-minor: Sol-major,
Relative to Re-minor: Fa-major,

When a modulation persists for more than a few measures, it is customary to cancel the Signature of the principal key and indicate anew the Signature of the new key.

Ex: From Mi-flat-major (three flats) to a permanent modulation into La-flat-major, (four flats):—



Note: It often happens that the above mentioned alterations take place without effecting a modulation. That is, the alterations do not actually lead to a resolution into the new key, or the latter is not firmly established by a continued progression in that key. In this case the alterations so found are simply called **Chromatic alterations.**

Chromatic Scales in the Two Modes

Chromatic scales are scales made up of chromatic and diatonic *half-tones* only. They contain twelve (12) degrees. (The seven (7) degrees of the diatonic scales and five (5) chromatic notes that divide the original whole tones of the diatonic scale.)

There are chromatic scales in all the keys and in the two modes, although they all sound practically alike, there are certain rules to be observed for the correct notation of these chromatic scales.

The first rule to be observed is that one must consider the degrees of the scale in its diatonic form, as they are to be found in that particular key, with *proper Signature.*

Then, divide each whole tone of the diatonic scale into two (2) half-tones by means of "raising" alterations when ascending, and "lowering" alterations when descending; that is: —

When ascending
- A diatonic double-flat degree will be raised by means of a flat;
- A diatonic flat degree will be raised by means of a natural;
- A diatonic natural degree will be raised by means of a sharp;
- A diatonic sharp degree will be raised by means of a double-sharp;

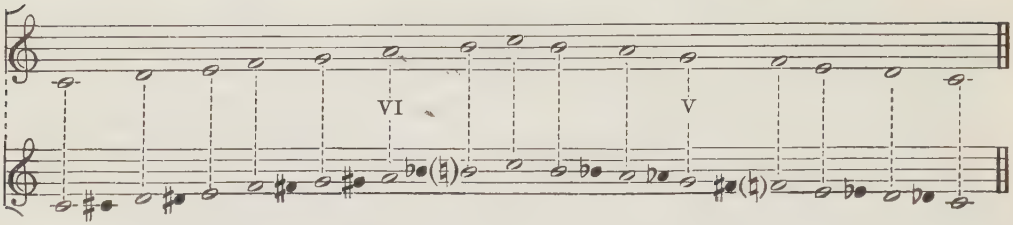
and conversely, when descending.

However, one of the most logical ways for the correct notation of a chromatic scale is to use the alterations (raising or lowering alterations) that would be used for modulating into the immediate neighboring keys.

Do-major:—As outlined on page 57, the proper alterations to use for such modulations would be: Sol-sharp; Mi-flat; La-flat; Fa-sharp; Si-flat; Do-sharp; Re-sharp.

Consequently, any of these alterations will be good to use in building up the chromatic scale of Do-major, using the raising alterations when going up, and the lowering alterations when coming down (as far as possible).

In doing so, we will be obliged *not to raise* the 6th degree (*submediant*) of the major scale *when ascending,* and *not to lower* the 5th degree (*dominant*) when *descending.* This rule should be observed in building up any Major Chromatic Scale.

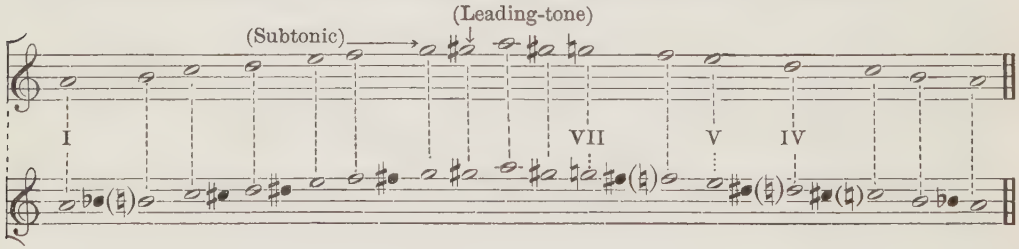
Ex: Diatonic scale of Do-major, to be used in order to build the Chromatic in the same key.

RULE I.

The same rules apply for Minor Chromatic Scales.

La-minor:—The alterations used for modulating into the neighboring keys would be: Sol-natural; Re-sharp; Do-sharp; Fa-sharp; Si-flat. (One must be sure to use *both forms of 7th degrees* in minor, as both are used at times, according to the minor form used.)

In building a Minor Chromatic Scale according to this rule, we will be obliged *not to raise* the 1st degree (*tonic*) of the minor scale when *ascending*, and *not to lower* the 5th (*dominant*) nor the 4th (*subdominant*) of the minor scale when *descending*.

Ex: Diatonic scale of La-minor, to be used in order to build the Chromatic in the same key.

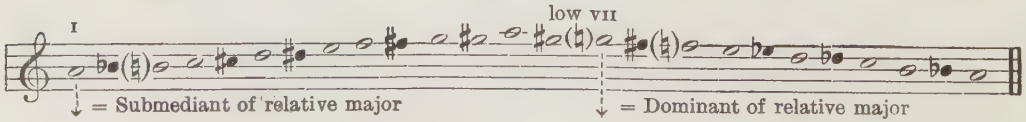


RULE II.

Another rule is frequently used for the Minor Chromatic Scales. It consists in using the degrees of the diatonic scale, with raising alterations when ascending, excepting for the first degree (tonic), and with lowering alterations when descending, excepting the low form of 7th degree (subtonic).

The reasoning for this other rule is that the minor scale being built with the notes of its relative major, should contain the same chromatic notes.

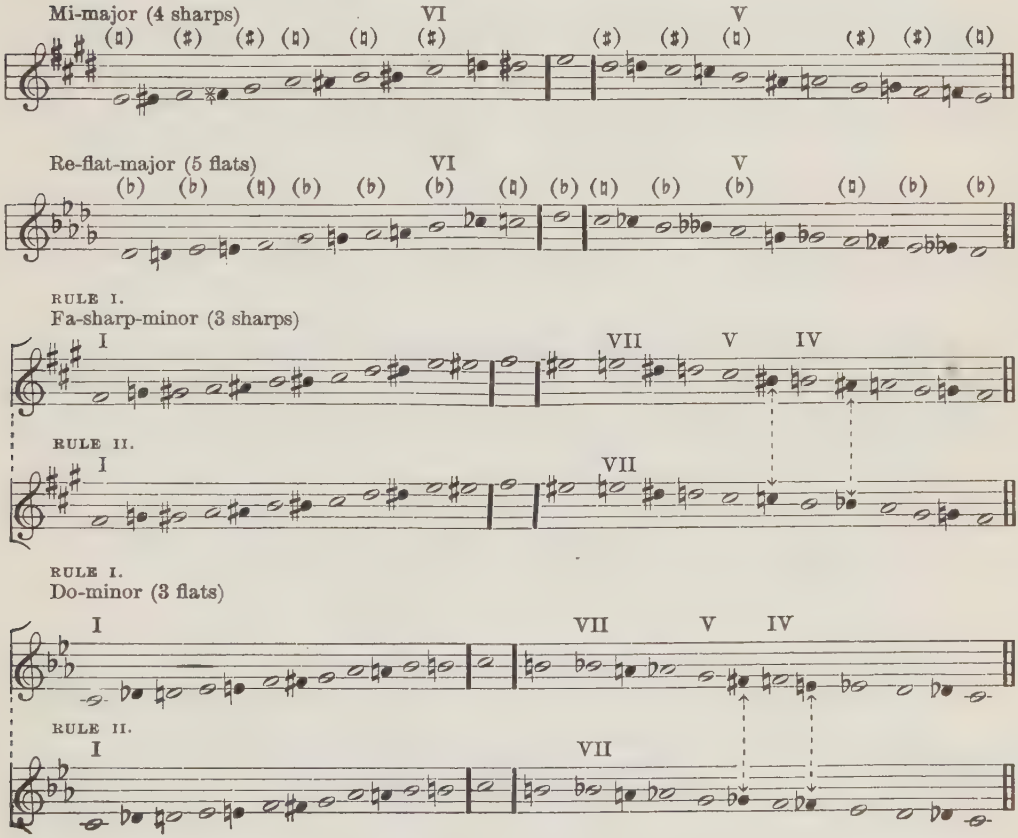
The tonic of the minor is the same note as the submediant of its relative major, and the subtonic of the minor is the same as the dominant of its relative major, which two degrees (submediant and dominant) in major, should not be raised nor lowered. Accordingly, a Minor Chromatic Scale would be built thus:—



Both reasonings are good and logical, but one should use certain rules for Chromatic scales, just as rules are observed for all other things musical.

The reasoning which we would recommend is that of the use of alterations that would help in modulating to the neighboring keys, since all our musical system is based upon the natural succession of alterations, scales, etc., in perfect ascending or descending fifths, through their common tetrachords, or common triads, etc.

SPECIMENS OF MAJOR AND MINOR CHROMATIC SCALES



CHAPTER NINE*

Musical Instruments; Voices; Transposing and Tempered Instruments

Musical instruments are classified as follows:—

(a) **Keyboard** instruments
(b) **Stringed** "
(c) **Wind** "
(d) **Percussion** "

Music for Keyboard instruments is generally written upon two (2) staves, one above the other, and connected by a brace.

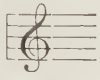
Ex: or

The upper staff is for the upper register, using the Sol(G)-clef-2nd-line; and the lower staff is for the lower register, using the Fa(F)-clef-4th-line.

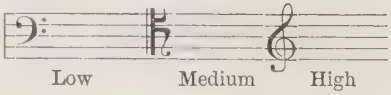
The principal Keyboard instruments are:—the ORGAN, HARPSICHORD, CLAVICHORD, HARMONIUM, PIANO (or Pianoforte), GLOCKENSPIEL and CELESTA.

(b) The Stringed instruments in common use are:—the VIOLIN, VIOLA, VIOLONCELLO (or 'Cello) and DOUBLE-BASS (or Contra-bass).

Music for all of these is written upon *one* staff, with:—

the Sol(G)-clef-2nd-line (for the Violin); Ex:

the Do(C)-clef-3rd-line (for the Viola); Ex:

the Fa(F)-clef-4th-line (low register)
Do(C)-clef-4th-line (medium register)
Sol(G)-clef-2nd-line (high register)
} .. (for the 'Cello and Double-bass†).

Ex: 
Low Medium High

(c) The Wind instruments are made of wood (called "Wood-winds") and of brass (called "Brasses"). There are two (2) classes of Wind instruments:

(1) the non-transposing instruments, and
(2) the transposing instruments (see page 64).

* In connection with this chapter, the use of "Instruments of the Modern Symphony Orchestra," by Arthur Edward Johnstone, is recommended. (Carl Fischer, publisher.)

† When performed upon a Double-bass, the music sounds an octave lower than when performed upon the 'Cello.

Those in common use are:—

Wood-winds:
- FLUTES, PICCOLO, BASS-FLUTES (2)
- OBOES, OBOE D'AMORE (2) AND ENGLISH HORNS (2)
- BASSOONS AND CONTRA-BASSOONS
- CLARINETS (2) AND BASS-CLARINETS (2)

Brasses:
- TRUMPETS (2); FRENCH HORNS (2)
- TROMBONES; TUBAS
- CORNETS (2); SAXOPHONES (2)

The music for all of these is written upon one staff, using the Sol(G)-clef-2nd-line for all, excepting for the Bassoon, Contra-bassoon,* Trombone and Tuba.* The music for the first two is written like that for the 'Cello and Double-bass, respectively. For the Trombone and Tuba, music is generally written with the Fa(F)-clef-4th-line (low register) and the Do(C)-clef-4th-line ***or*** the Sol (G)-clef-2nd-line (medium or high registers).

The HARP is a Stringed instrument, and the music for it is written in the same manner as that for Keyboard instruments.

The principal Percussion instruments are: the KETTLE-DRUMS or TYMPANI; DRUMS; CYMBALS; TRIANGLE; BELLS (or Chimes); GONGS; TAM-TAMS; CASTANETS; CROTALES, etc.

These instruments being one-tone (monotone) instruments, their notation is purely rhythmical, so, only *one* line is required for the notation of their respective parts, with the use of special signs to denote single or double hitting, or rolling, etc., as the case may be. The Tympani can be tuned to certain pitches, but only one pitch at a time.

VOICES

There are two kinds of human voices: —

1. **Men's voices**
2. **Women's and Children's voices**

Each kind is divided into three (3) classes, corresponding to the *Low*, *Medium* and *High* registers, as indicated in the Cycle of Sounds (page 5).

Men's voices are: —

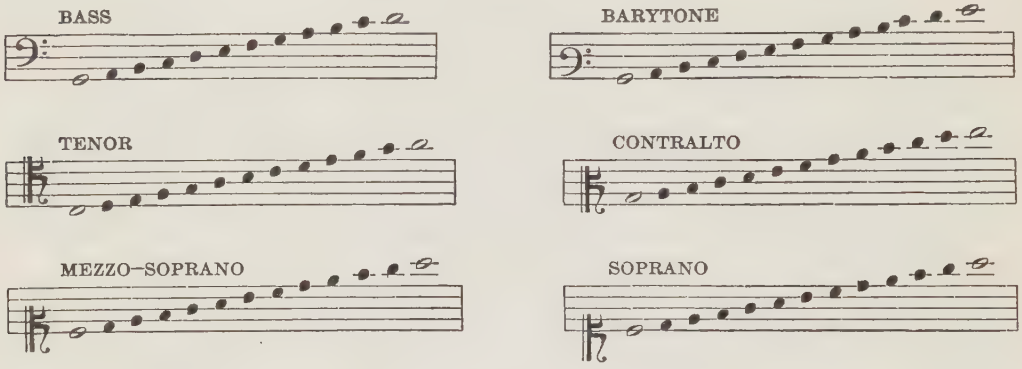
- BASS: (*low*) The music for which is written with the F-clef on the 4th-line.
- BARYTONE: (*medium*) The music for which is written with the F-clef on the 4th-line.
- TENOR: (*high*) The music for which is written with the C-clef on the 4th-line.

Women's and Children's voices are: —

- CONTRALTO: (*low*) The music for which is written with the G-clef on the 2nd-line.
- MEZZO-SOPRANO: (*medium*) The music for which is written with the G-clef on the 2nd-line.
- SOPRANO: (*high*) The music for which is written with the G-clef on the 2nd-line.

* The Contra-bassoon sounds an octave lower than the Bassoon, and the Tuba sounds an octave lower than the Trombone.

In former times, it was the custom to use the exact clef for each kind of voice, the Barytone music being written with the F-clef on the 3rd-line, the Contralto music with the C-clef on the 3rd-line, the Mezzo-soprano music with the C-clef on the 2nd-line, and the Soprano music with the C-clef on the 1st-line.

The ordinary compass of each voice is thirteen (13) diatonic tones, as follows:

TEMPERED INSTRUMENTS

Tempered instruments are instruments of *fixed intonations*, which are tuned so that the whole tones are equally divided into two (2) half-tones of four and one-half ($4\frac{1}{2}$) commas each (see page 40), there being *no* difference between a note and its enharmonic.

All **Keyboard** instruments are *Tempered* instruments.*

TRANSPOSING INSTRUMENTS

Transposing instruments are instruments whose *Natural scale* is written in C-major, regardless of the exact pitch emitted by such instruments, when playing *as the music is written.*

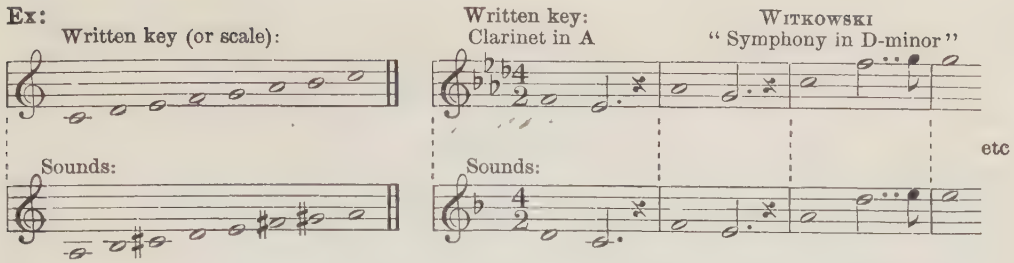
The interval-difference between the natural scale of C-major and the actual sounding scale emitted by the instrument involved, *always prevails*, and must be taken into consideration when writing the parts for such Transposing instruments.

However, the instruments always bear the name of a particular key, and these are given as compared to the Natural scale of C-major.

Should it be said that an instrument is "in La (A)," this means that when the Natural scale of C-major is played upon it, the *actual sounds* are those of the scale of *A-major.*

The interval-difference between the written and sounded scale is then a minor third. This interval of a minor third must therefore be taken into consideration whenever writing for such an instrument (or when reading its part on an instrument other than that for which the music was written).

* For ampler explanation, see Baker's "Dictionary of Musical Terms" (Temperament).



The Transposing instruments are to be found among the Wind instruments only.
The Transposing instruments in common use are:—

Wood-winds

BASS-FLUTE (now in silver) . in G . . . . . perfect 4th lower than written key.
OBOE-D'AMORE . . . . . in A . . . . . minor 3rd lower than written key.
ENGLISH HORN . . . . . in F . . . . . perfect 5th lower than written key.
SMALL CLARINET . . . . . in E♭ . . . . . minor 3rd above written key.
CLARINET . . . . . in B♭ . . . . . major 2nd lower than written key.
CLARINET . . . . . in A . . . . . minor 3rd lower than written key.
Alto-clarinet (rarely used) . *in F or E♭* . . *perfect 5th or major 6th lower than written key.*
BASS-CLARINET . . . . . in B♭ . . . . . major 9th lower than written key (octave lower than clarinet in B♭).
BASSET-HORN . . . . . in F . . . . . perfect 5th lower.

Brasses

FRENCH HORN . . . . . in F . . . . . perfect 5th lower than written key.
There are French Horns in all the keys, but the one in F is most commonly used in the modern orchestra.
TRUMPET . . . . . in D . . . . . major 2nd above written key.
TRUMPET . . . . . in B♭ . . . . . major 2nd lower than written key.
TRUMPET . . . . . in A . . . . . minor 3rd lower than written key.
There are Trumpets in all keys.
CORNET . . . . . in B♭ . . . . . major 2nd lower than written key.
CORNET . . . . . in A . . . . . minor 3rd lower than written key.
Cornets, also, are practically in all the keys.
The Trombone in C is mostly used, although there are the Alto, Tenor and Bass Trombones, not considered as transposing instruments, since their music is written with the proper clefs: C-3rd-line (Alto), C-4th-line (Tenor), and F-4th-line (Bass).

SAXOPHONE
Soprano . . . . in B♭ . . . . . major 2nd lower than written key.
Alto . . . . . in E♭ . . . . . major 6th lower than written key.
Tenor . . . . . in B♭ . . . . . major 9th lower than written key.
Baritone . . . . in E♭ . . . . . major 13th lower than written key.
Bass . . . . . in B♭ . . . . . major 16th lower than written key.

CHAPTER TEN

Transposition

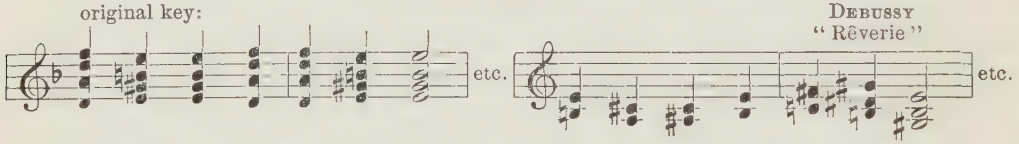
To **Transpose** is to re-write, read, or perform a musical composition in a key other than that in which it is written originally.

There are two kinds of Transposition: —

1. **Written Transposition**
2. **Transposition at Sight**

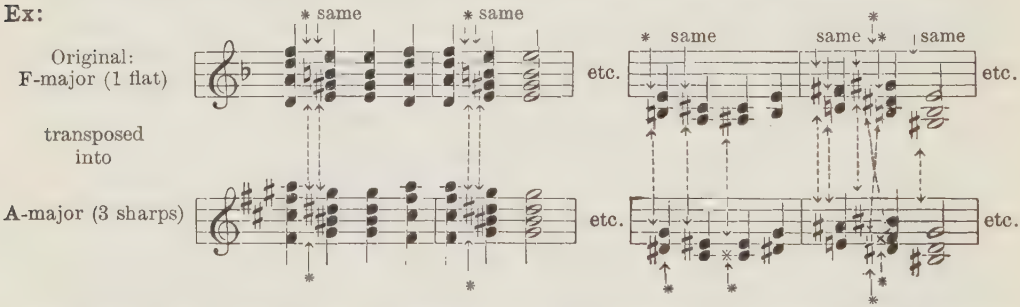
Written Transposition is comparatively easy, since it only necessitates a fair knowledge of Intervals, Keys, and Signatures.

Ex: Written Transposition of the following fragment into the key of A-major, — major 3rd *above* original key:



When re-writing this fragment in the *new* key, place its proper Key-signature, three (3) sharps, and take care that there is *always the difference of a major 3rd between each note of the original and the corresponding note of the transposed version*, e.g.:—

Ex:



Note: Observe the different kinds of alterations used for corresponding notes in the original and transposed versions. When transposing, the same kind of alteration does not always occur at corresponding points in the original and transposed versions. This is necessary in order to preserve the interval of transposition (in this instance, a major 3rd) throughout the transposition.

Transposition at Sight necessitates a thorough knowledge of Intervals, Keys and their Signatures, and, also, training in reading in the different clefs.

There are three rules for Transposition at Sight: —

1. **Find the new Key and its Signature.**
2. **Find the Clef** (or Clefs) **which will give the proper name to the notes** (originally written in another key and with another clef).*
3. **Find what changes of accidentals are necessary, and in what manner these changes must be made.** (See Note, above.)

* See " Transposition by Clef," Eustace B. Rice; published by New England Conservatory of Music, Boston, Mass.

1st Rule. — If the transposition is required at a given interval above or below the original, *find* (counting from the original tonic) *what the new tonic will be*, and, also, the *Signature of this new key.*

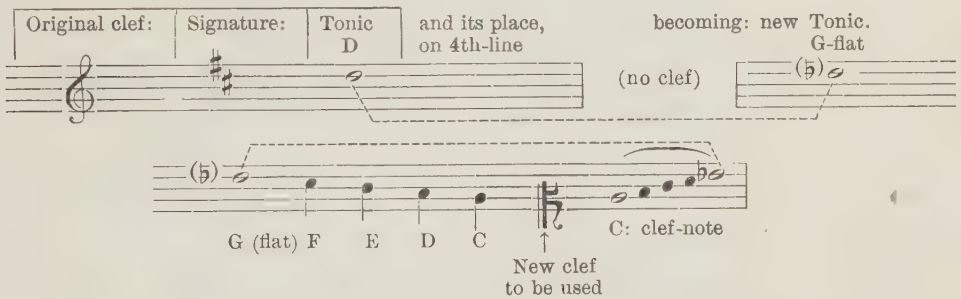
The **mode will remain the same.**

If the new key is named at once, then only figure what the Signature will be, and mentally suppress the old (original Signature) and replace it (*always mentally*) by the new one.

2nd Rule. — (a) Be certain of the Clef (or Clefs) with which the piece is originally written; then: *find out on what line or in what space* (of the staff) *the original tonic stands* (when written with the original clef).

(b) Remember that the name of the old tonic must be changed to that of the new tonic, *without changing its position on the staff* (which is impossible to do, since the notes are already printed).

Ex: From D-major into G-flat-major:



The new tonic is G-flat—to call the 4th-line G (flat), the C-clef on the 2nd-line must be used as the new clef, in place of G-2nd-line.

3rd Rule. — When reading a piece of music, aside from the constitutive alterations (or Signatures) that are part of the key, other alterations are encountered which do not pertain to the key, and which are called **accidentals.** Consequently, it is sometimes necessary to use a *different kind of alteration* before some degrees; at others, the accidentals are of the *same* kind, when transposing. (See Note: page 66.)

(a) Do not confuse Signature with accidentals.

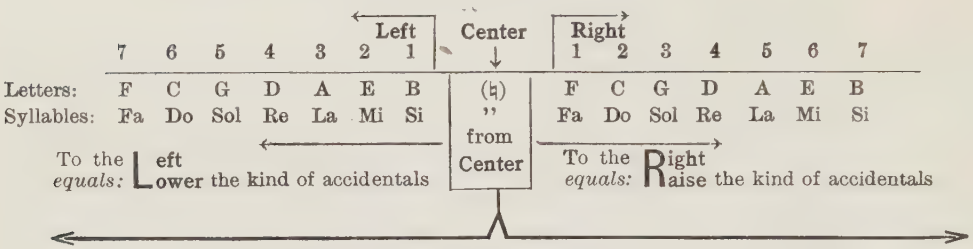
(b) Remember that it is the *kind of accidental* that differs (in front of certain notes), but not the *name* of these notes (*when reading with the new clef*).

(c) Find the number of notes, and the names of the notes before which it will be necessary to change the kind of accidental.

(d) The *number-differences*,* or *total* between the original and new Signatures, indicate the number of notes before which the kind of accidentals will be changed.

* *Note:* When the original and new Signatures are made up of the *same kinds* of alteration, find the *number-difference* between them. If the two Signatures are made up of *different* kinds, *add* the two Signatures and it will show *how many* names of notes are to be counted on the Diagram.

(e) The *names* of these notes (as they will be read with the new clef) will be found by using the following Diagram (which, for practical purposes, should be memorized and vizualised):


Left
Center
Right
7 6 5 4 3 2 1
1 2 3 4 5 6 7
Letters: F C G D A E B (♮) F C G D A E B
Syllables: Fa Do Sol Re La Mi Si " Fa Do Sol Re La Mi Si
from Center
To the equals: Lower the kind of accidentals
To the equals: Raise the kind of accidentals

(f) If transposing into a key which requires *less flats* or *more sharps* than the original, the number-difference, or total between the old and new Signatures, must be accounted for as so many notes, before which the accidentals are to be *raised.* The names of these notes will be found by counting them on the above Diagram, from the **Center** towards the **Right.** The accidentals will be raised one chromatic-half-tone before said notes (when actually transposing):

The —𝄫— becoming ♭
" —♭— " ♮
" —♮— " ♯
" —♯— " 𝄪

(See Examples I, II, III, — Pages 68, 69 and 70.)

(g) If transposing into a key which requires *less sharps* or *more flats* than the original, the number-difference, or total between the old and new Signatures, must be accounted for as so many notes, before which the accidentals are to be *lowered.* The names of these notes will be found by counting them on the above Diagram, from the **Center** towards the **Left.** The accidentals will be lowered one chromatic-half-tone before said notes (when actually transposing):

The —𝄪— becoming ♯
" —♯— " ♮
" —♮— " ♭
" —♭— " 𝄫

(See Examples IV, V, VI, — Pages 70, 71 and 72.)

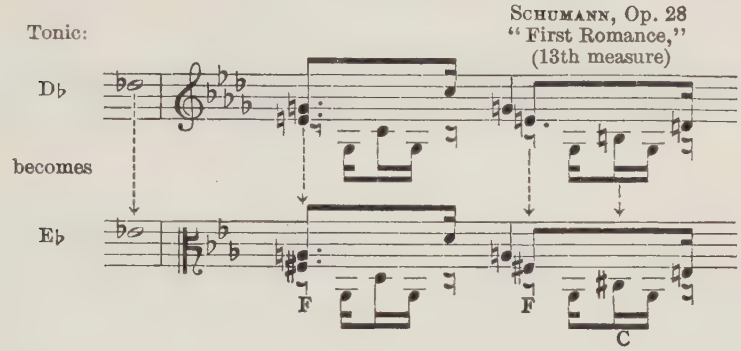
TRANSPOSITION AT SIGHT: 3rd RULE EXAMPLES (Accidentals)

To the **Right** *equals*: **Raise Accidentals.**

I. — **Less Flats:**

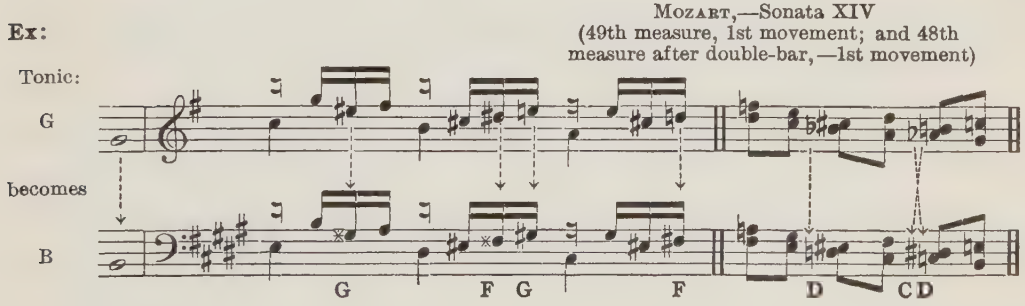
(a) From D-flat-major (five flats) into E-flat-major (three flats).
(b) The number-difference between 5 and 3 is *two* (2);
(c) Consequently, there will be *two* names of notes — to be counted on the Diagram — from the **Center** towards the **Right,** which are: F, C.

(d) In front of these two notes *only* (reading them with the new clef, in new key) will it be necessary to change the kind of accidentals, if any, raising them one chromatic half-tone.

Ex:

II. — **More Sharps:**

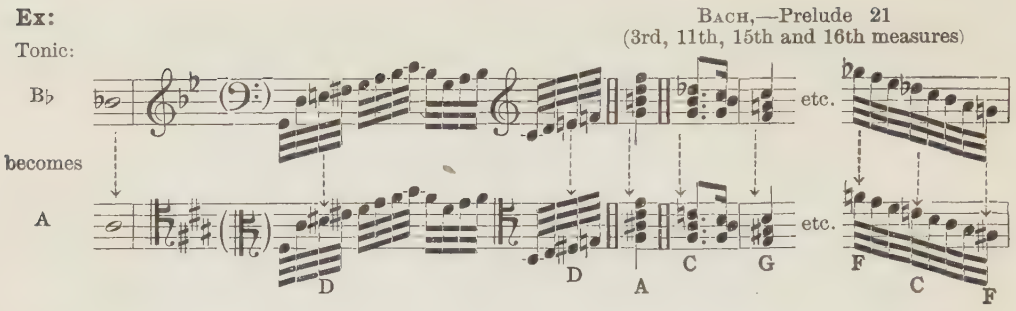
(a) From G-major (one sharp) into B-major (five sharps).
(b) The number-difference between 1 and 5 is *four* (4);
(c) Consequently, there will be *four* names of notes — to be counted on the Diagram, — from the **Center** towards the **Right,** which are: F, C, G, D.
(d) In front of these four notes *only* (reading them with the new clef, in new key) will it be necessary to change the kind of accidentals, if any, raising them one chromatic half-tone.

Ex:



III. — **Less Flats** *and* **More Sharps:** (See Note: page 67.)

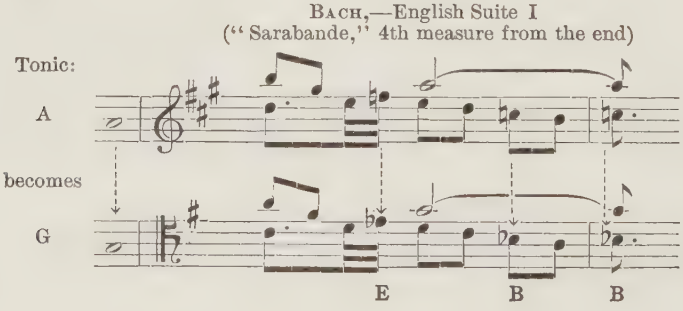
(a) From B-flat-major (two flats) into A-major (three sharps).
(b) The *total* of the two Signatures, 2 and 3, is *five* (5);
(c) Consequently, there will be *five* names of notes — to be counted on the Diagram — from the **Center** towards the **Right,** which are: F, C, G, D, A.
(d) In front of these five notes *only* (reading them with the new clef, in new key) will it be necessary to change the kind of accidentals, if any, raising them one chromatic half-tone.

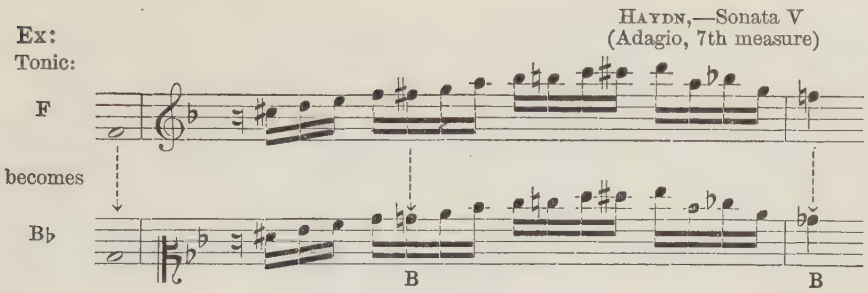
Ex:

Note: In the case, such as in " III," it would be easier to remember that the accidentals are **not** changed in front of two (2) notes, viz: E, B.

To the **Left** *equals:* **Lower Accidentals.**

IV. — **Less Sharps:**

(a) From A-major (three sharps) into G-major (one sharp).
(b) The number-difference between 3 and 1 is *two* (2);
(c) Consequently, there will be *two* names of notes — to be counted on the Diagram — from the **Center** towards the **Left,** which are: B, E.
(d) In front of these two notes *only* (reading them with the new clef, in new key) will it be necessary to change the kind of accidentals, if any, lowering them one chromatic half-tone.

Ex:

V. — **More Flats:**

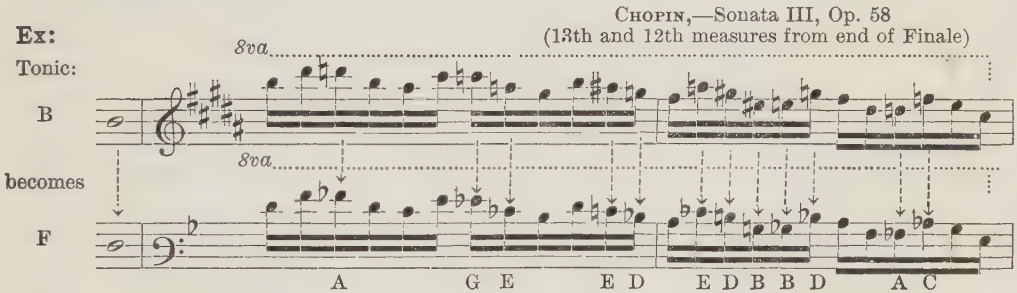
(a) From F-major (one flat) into B-flat-major (two flats).
(b) The number-difference between 1 and 2 is *one* (1);
(c) Consequently, there will be *one* name of note — to be counted on the Diagram — from the **Center** towards the **Left,** which is: B.
(d) In front of this one note *only* (reading it with the new clef, in new key) will it be necessary to change the kind of accidentals, if any, lowering it one chromatic half-tone.

VI. — **Less Sharps** *and* **More Flats**: (See Note: page 67.)

(a) From B-major (five sharps) into F-major (one flat).

(b) The *total* of the two Signatures, 5 and 1, is *six* (6);

(c) Consequently, there will be *six* names of notes — to be counted on the Diagram — from the **Center** towards the **Left,** which are: B, E, A, D, G, C.

(d) In front of these six notes *only* (reading them with the new clef, in new key) will it be necessary to change the kind of accidentals, if any, lowering them one chromatic half-tone.



Note: In the case, such as in " VI," it would be easier to remember that the accidentals are *not* to be changed in front of one note, viz: F.

Whether or not accidentals are encountered in Transposing at Sight, the notes should be read or performed as they would naturally be altered (as in the key into which one transposes), with due regard for the Signature of that new key.

In the case of a total of two Signatures that would amount to more than seven (7), (when counting the names of the notes on the Diagram) when arriving at the 7th one (which would be represented by the end of the line, either to the **Right** or **Left,** as the case may be), return to the starting point, from the **Center,** counting right on, 8, 9, etc.

When the name of a note is met more than once — as mentioned above — it means that when an accidental is found in front of that note, it must be changed (raised or lowered) once more, or twice more; each time (each chromatic-half-tone) being then accounted for each time the name of that note is met in counting it out on the Diagram.

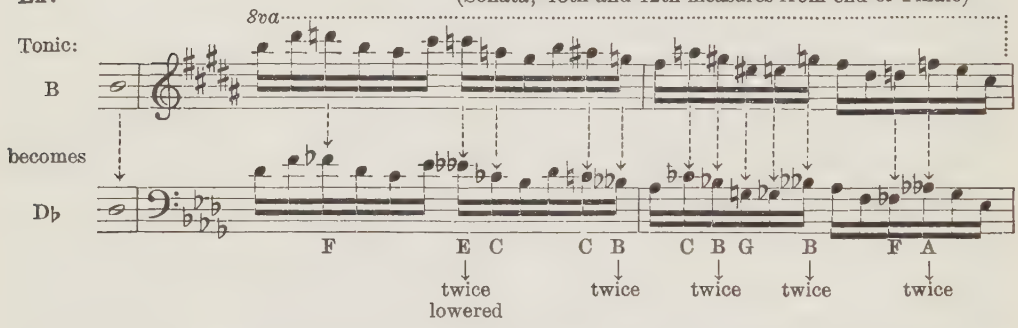
VII. — **More than Seven Accidentals:**

(a) From B-major (five sharps) into D-flat-major (five flats).

(b) The *total* of the two Signatures, 5 and 5, is *ten* (10);

(c) Consequently, there will be *ten* names of notes — to be counted on the Diagram — from the **Center** towards the **Left**, which are: B, E, A, D, G, C, F (return to starting point) B, E, A.

(d) In front of B, E, and A (which were met twice each), the kind of accidentals, if any, will have to be lowered *two* (2) chromatic half-tones, and in front of the others (D, G, C, F) the accidentals will be lowered *one* (1) chromatic half-tone only.

Ex: CHOPIN, Op. 58, No (Sonata; 13th and 12th measures from end of Finale)

Chromatic Transposition occurs when transposing a piece of music one chromatic half-tone higher or lower than the original key. It does not necessitate a change of clef, since the notes in old and new keys bear the *same* names.

For such, the 2nd rule of transposition at sight is omitted, and only the 3rd rule is really and actually applied. The First Rule is always taken for granted.

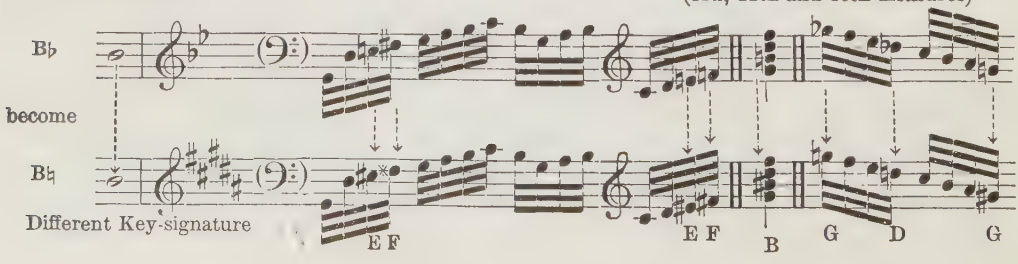
VIII. — **Chromatic Transposition** (*Chromatic half-tone higher*)

(a) From B-flat major (two flats) into B-major (five sharps),— *less flats and more sharps.*

(b) The total of the two Signatures, 2 and 5, is *seven* (7): (See Note: page 73.)

(c) Consequently, there will be *seven* (all) names of notes—to be counted on the Diagram —from the **Center** towards the **Right,** which are: F, C, G, D, A, E, B (all the names).

(d) In front of these seven notes *only* will it be necessary to change the kind of accidentals, if any, raising them one chromatic half-tone.

Ex: Same clef is used: BACH,–Prelude 21 (3rd, 11th and 16th measures)

In the foregoing example, accidentals are encountered in front of five names of notes (out of the seven), but if accidentals were encountered in front of the other two, (C, A) a similar change in the kind of accidental should be made.

IX. — **Chromatic Transposition** (*Chromatic half-tone lower*)

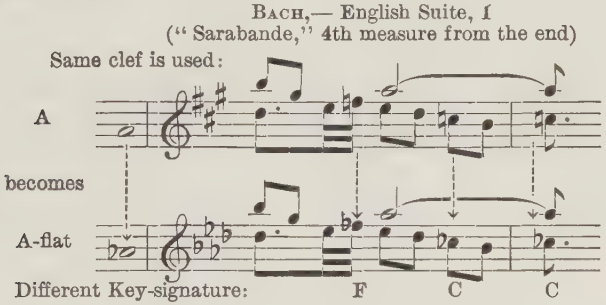
(a) From A-major (3 sharps) into A-flat major (four flats),—*less sharps and more flats.*

(b) The total of the two Signatures, 3 and 4, is *seven* (7):*

(c) Consequently, there will be *seven* (all) names of notes — to be counted on the Diagram — from the **Center** towards the **Left,** which are: B, E, A, D, G, C, F (all the names).

(d) In front of these seven notes *only* will it be necessary to change the kind of accidentals, if any, lowering them one chromatic half-tone.

Ex:



In the above example, only two notes are found with accidentals (out of the seven), but if accidentals were encountered in front of the other five, (B, E, A, D, G), a similar change in the kind of accidental should be made.

* *Note:* From the above two Examples (VIII, b; IX, b) it is to be remarked that the total of the two Signatures, for both kind of transpositions is *seven.* This number of seven accidentals will always be found to prevail for all Chromatic Transpositions.

CHAPTER ELEVEN

Origin of Musical Sound; Tuning-Fork; Metronome

A Stretched string, when plucked will give rapid oscillations called **Vibrations.** Vibrations may be obtained from any tone-producing body (or sonorous body, — see page 45) such as a column of air; glass; strings; strips of metal, etc.

A certain number of vibrations in a given length of time produce a **tone** or **musical sound.**

The *more* vibrations occurring in that given length of time, the *higher* the tone will be, and, conversely, the *fewer*, the *lower* the tone will be.

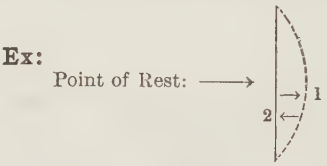
The larger the tone-producing body is, the *slower* it will vibrate, consequently, the fewer vibrations there will be, and the lower its tones will be (Ex: DOUBLE-BASS). The smaller the tone-producing body is, the faster it will vibrate, consequently, more vibrations will occur, and the higher its tones will be, (Ex: FLUTE).

The *length of time* adopted for the measurement of vibrations is a **second.**

The number of single or double vibrations in a second *determines the pitch.*

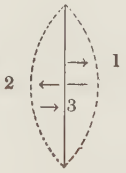
Single vibration results from the oscillation of the tone-producing body from its point of rest (or middle-point) to one side, and back to the middle-point.

Ex:



Double vibration results from the oscillation of the tone-producing body from its middle-point to one side, then across to the other side, and, last, to its middle-point. (In the United States, it is the custom to count or measure the tones by double vibrations.)

Ex:



The tone adopted universally as a standard by which the pitch of any other tone may be determined, is one-line *a* (La): which is the result of 440 (double) vibrations per second.

" . . . The standard *French pitch*, universally adopted in France in 1859, gives *a'* 435 (double) vibrations per second. . . . Formerly there was no recognized standard, the pitch varying in different instruments and localities. . . . The inconveniences resulting led to the estab-

lishment of a mean pitch (*a'*., about 420 vibrations) which held its own for some 200 years; this has been called the *classical pitch*, it having obtained throughout the era of classical composition. After this, the growing tendency to force the pitch upwards led to numerous deliberations by scientists and musicians; the German congress at Stuttgart adopted the pitch *a'* 440; but the French pitch mentioned above (435) is, in point of fact, the only real standard, and since its formal adoption by the Vienna congress in Nov., 1887, is frequently termed the *international pitch*. . . ." (Dictionary of Musical Terms, — Theo. Baker.)

For the sake of precision in the matter of absolute pitch, a small two-tongued steel instrument sounding *a'* (440) is used in tuning musical instruments: this steel instrument is called a **Tuning-fork.**

A small metal or wooden reed-pipe, producing " *a'* " is also used in place of a tuning-fork; its pitch is liable to slight variations owing to changes of temperature, consequently its use is not to be recommended. It is called a **Pitch-pipe.**

HOW TO USE A TUNING-FORK

To put a Tuning-fork into vibration, proceed as follows:

1. Hold the fork lightly, a little below the tongue-base,
2. Strike briskly the extremity of one of its tongues, upon a solid body (such as a wooden table, etc.),
3. Quickly (while vibrating) place the extremity of its single-branch upon the solid body, and the sound of *a'* will be produced.

METRONOME

A **Metronome*** is a mechanical instrument regulated like a clock and working on the same principle.

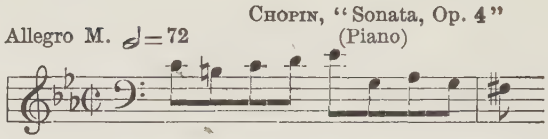
This instrument is of invaluable help in the study of difficult passages and runs; also, in finding the *speed* or *tempo* of a musical composition, provided, of course, that the Metronome mark is indicated at the beginning of the piece.

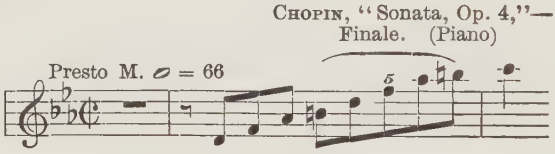
It is hardly possible to give a definite Metronome mark corresponding to any given rate of speed, or to give the exact *tempo* of an *allegro*, etc., since these are varied, according to the conception of the composer, the general character of the work, etc.

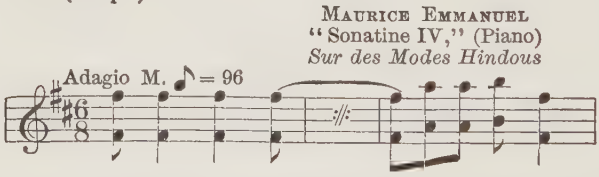
The explanation of the meaning of these marks, and how to make the Metronome work accordingly, only will be given.

The marks are for the most part to establish the rate of speed (*tempo*) of the beat; sometimes they establish the *tempo* of the half-beat, at times the *tempo* of the entire measure, etc.

* The inventor of the Metronome was Maelzel, of Vienna (1816).

Ex: Beat (*tempo*)

This mark (M ♩ = 72) is for the speed of the **beat,** since a half-note (𝅗𝅥) forms each beat of the measure in $\frac{2}{2}$ time, and since the half-note is specified in the Metronome mark. Consequently, set the **top** *of the weight in the notch, opposite the figure* 72, as written on the scale, and each tick of the pendulum will correspond to the duration of each half-note (𝅗𝅥), or beat.

Ex: Measure (*tempo*)

The mark specifies the whole note (𝅝), which is the **measure-unit in** $\frac{2}{2}$ time. This means that each tick of the Metronome, after being set as explained in the preceding example, corresponds to the duration **of a whole note (𝅝), or** the duration a whole measure.

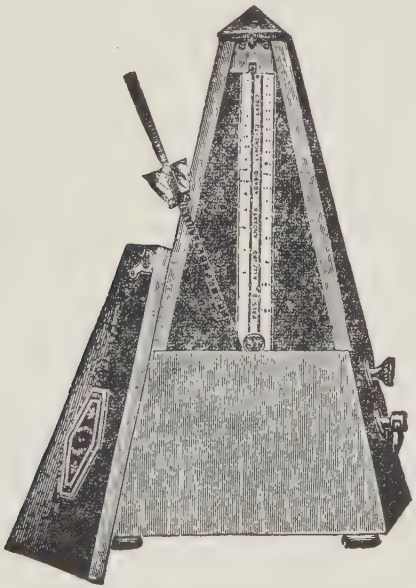
Ex: One third of beat (*tempo*)

An eighth-note (♪), as specified in the marking, being one-third-beat in the $\frac{6}{8}$ time measure, will correspond in duration to each Metronome tick, set at 96, as previously explained; etc.

The Metronome unit is 60, that is to say, being regulated like a clock, it ticks, when set at sixty, 60 times per minute, or once to each second. All the other marks are derived accordingly, from 60.

120 is twice faster than 60; 90 is one-third, 80 is one-fourth faster; in other words, if set at 120, it will tick 120 times per minute; if set at 90 it will tick 90 times per minute, etc.

The figures on the graduated scale progress by two, from 40 to 60; by three, from 60 to 72, by four, from 72 to 120 (from 80 to 120, being double of 40–60, the progression of the figures is naturally twice as large); then, they progress by 6 and by 8.

The slowest figure-mark is 40, and the fastest is 208.
By two: 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60.
By three: (60), 63, 66, 69, 72.
By four: (72), 76, 80, 84, 88, 92, 96, 100, 104, 108, 112, 116, 120.
By six: (120), 126, 132, 138, 144.
By eight: (144), 152, 160, 168, 176, 184, 192, 200, 208.



METRONOME

CHAPTER TWELVE

Ornaments; Embellishments

The notes forming the musical language are not all of equal importance; some of them form the principal, real melodic-line, others are ornamental, and are used to emphasize the melodic-line.

The notes forming the melody are called **Real, Essential** or **Principal-notes.**

The others are known as **Ornamental-notes, Auxiliary-notes** or **Embellishments.**

The Ornamental-notes were abundantly used in music of the past, especially by composers of the sixteenth and seventeenth centuries.

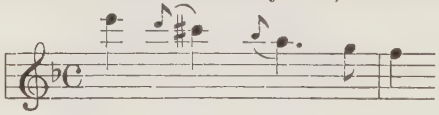
Their excessive use was justified in that the instruments of that period, such as the CLAVICHORD, SPINET, etc., were dry, lacking the continuity of tone that our modern PIANOS have.

In order to distinguish the Ornamental-notes from the Essential-notes, most of them were written in *small notes*, comparatively to the melodic-notes.

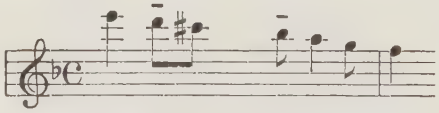
They were practically all written quite indifferently, as to their exact valuation; and this has caused, and is still causing, controversy as to their execution.

Nowadays, they are written in notes of ordinary size, with their correct time-value.

Ex: Former notation:



Modern notation:



The principal kinds of Ornaments are:

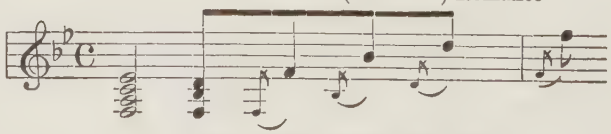
(a) **Grace-notes,** or *Acciaccatura* (single, double)
(b) **Appogiatura,** or *Long* or *Expressive Grace-note*
(c) **Slides** and **Mordents** (single, double or triple)
(d) **Turns** or *Gruppetti*
(e) **Trills**

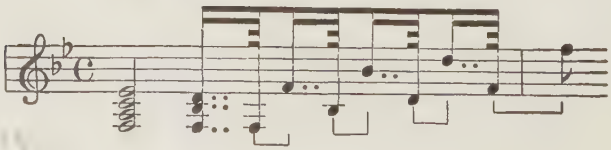
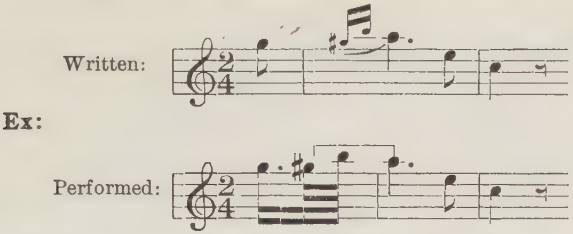
(a) 1. An **Acciaccatura** is indicated as a *small* note with a light line across the stem (𝅘𝅥𝅯). The single grace-notes are the easiest of all to execute; their time-value being so small that they are to be played almost at the same time as the essential-note:

MOZART, "Concerto in D-minor" (for Piano) Romance

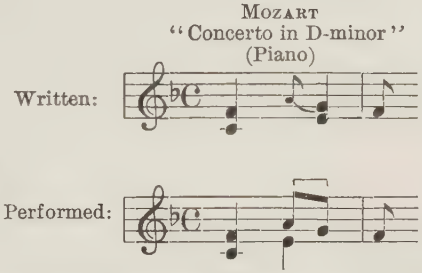
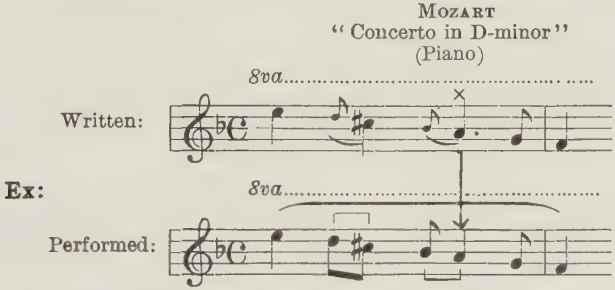
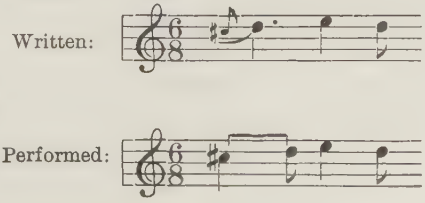
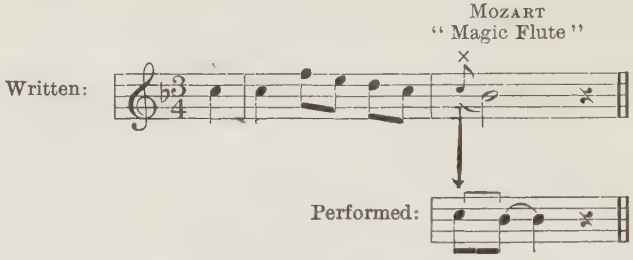
Ex:

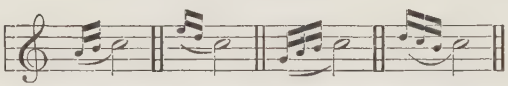
Written:



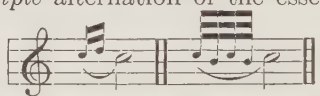
Performed:

2. A **Double-acciaccatura** consists of two (2) small notes, one *lower* and one *higher* than the essential-note. They are to be played in the manner of the single acciaccatura, very briskly and shortly before the essential-note:

(b) An **Appogiatura** is indicated in the manner of the Grace-note, but *without* the line across the stem: (♪)

The Appogiatura is a dissonance, as compared to the essential-note. It must therefore be emphasized so as to intensify the attraction of the succeeding essential-note, (its natural resolution).

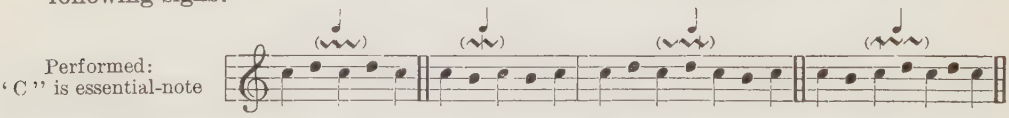
1. If it precedes a *binary* essential-note, the Appogiatura has *one-half* (½) *the value* of the essential-note:

2. If it precedes a *ternary* essential-note, it is generally given *one-third* (⅓) of *the value* of the essential-note:

It is ***sometimes*** given two-thirds (⅔) of the value of the ternary essential-note, when that ternary essential-note has an *integral number of beats*:

It is also said that, in early classical compositions, the composers took particular care in notating the Appogiaturas, giving them (in small notes) their exact valuation:

(c) **Slides** consist of an ascending or descending diatonic series of two (2) or more small notes:

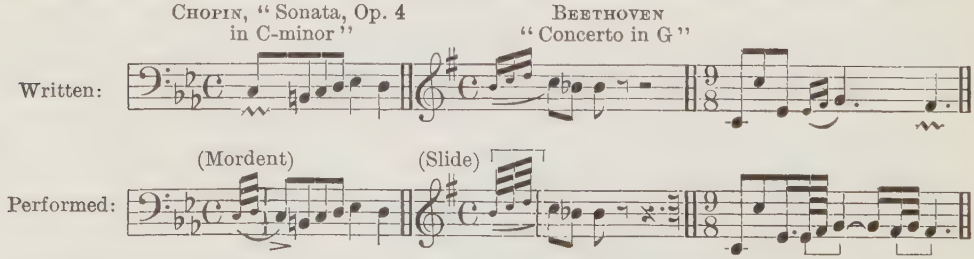
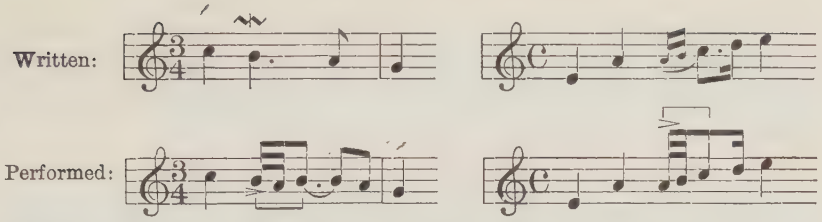


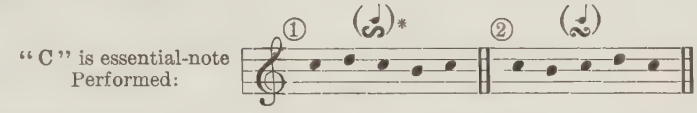
Mordents consist of the *single, double* or *triple* alternation of the essential-note with its lower or higher auxiliary-note: **Ex:**



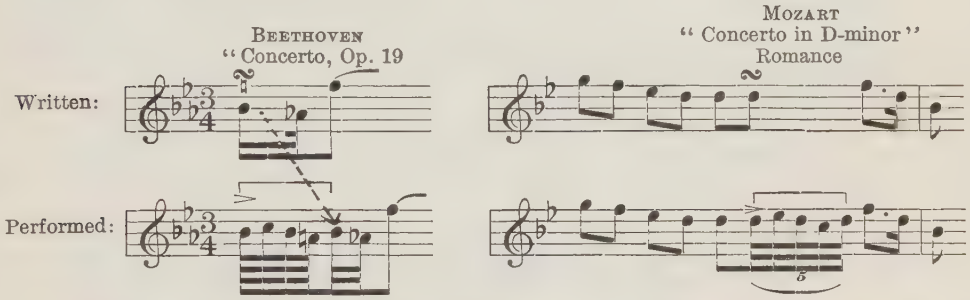
The single Mordents are the most used and are indicated by the following signs, placed above or below the essential-note: (higher) — (lower).

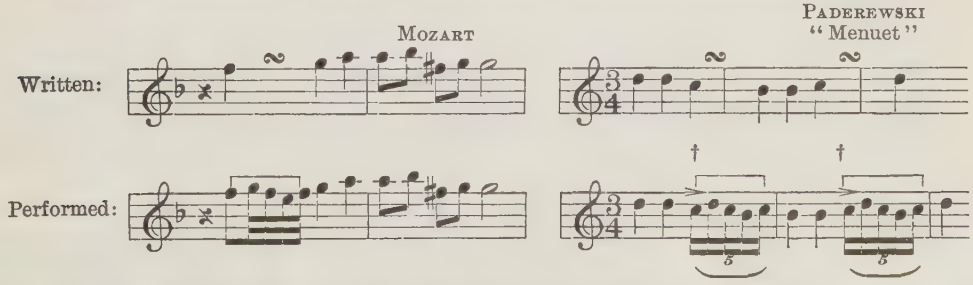
Double and triple Mordents are to be found in greater quantity within clavichord music (Scarlatti, Bach, Couperin, Rameau, etc.). They are indicated by the following signs:

Slides and Mordents are performed in like manner, as to their time-valuation.

1. If a Slide precedes (and if the Mordent sign is over) a *binary* essential-note, or *ternary* essential having an *integral number of beats*, each unit of the slide or mordent is generally given one-eighth ($\frac{1}{8}$) (or one-sixteenth) of the *preceding beat* in *Simple time*, and, if in *Compound time*, it is approximately given one-twelfth ($\frac{1}{12}$) (or one-twenty-fourth) of the *preceding* beat (or part of beat):

2. If it precedes (Slide) or is over (Mordent) a *ternary* essential-note having *fractional parts of beats*, each unit will be given the same time-valuation as in above example, but will take that valuation from the beat of the essential-note itself, the latter being performed on the remainder of that beat:

(d) **Turns** consist of five (5) notes, the essential-note being performed thrice, alternately with its higher and lower auxiliary-notes. The following signs are the *Gruppetti* signs:

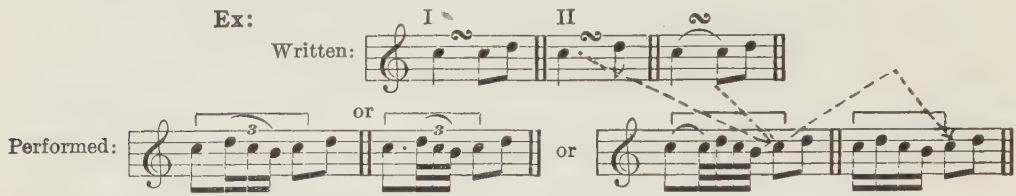


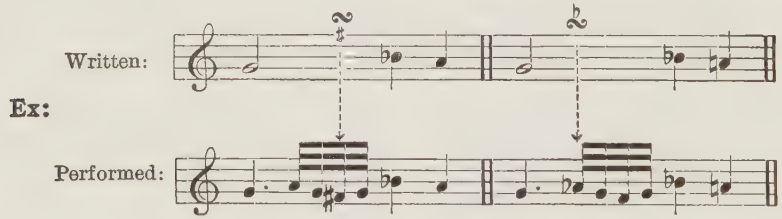
1. If the sign is placed *over* (or under) the essential-note (binary or ternary), the Turn takes its time-value from that essential-note, in the same proportion as the slides and mordents:

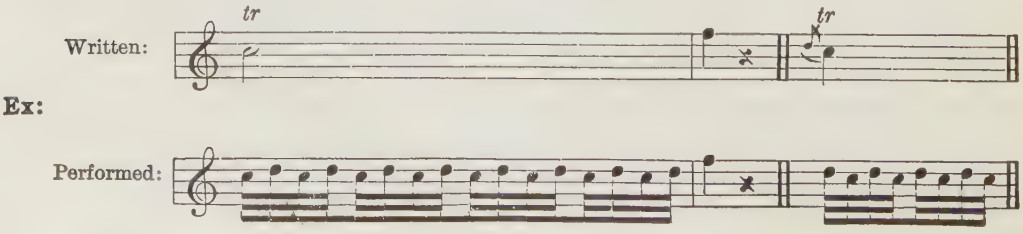
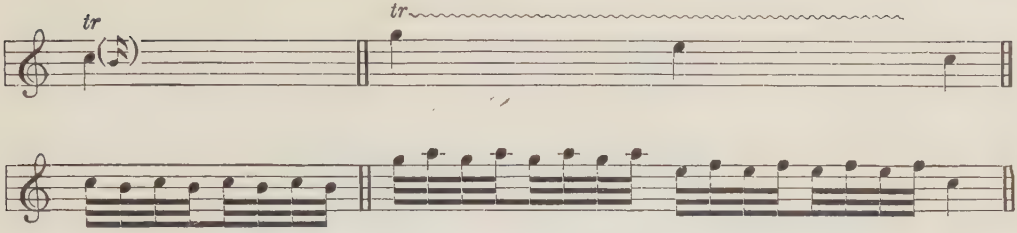


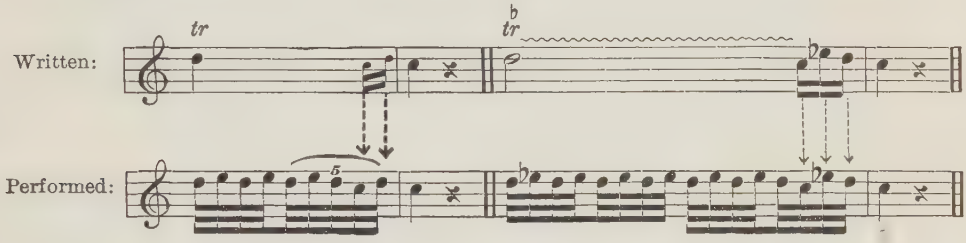
2. If the sign is placed *after* a binary essential-note or ternary essential-note having an *integral number of beats*, the essential-note is to be performed in its proper place and the remaining four (4) of the group will be performed before the following melodic-note, and in the same proportion as above example:

* Nowadays, when gruppetti-signs are used, no difference is made as to the direction of the notes, according to the written sign. Only this one (𝆔) is used, and invariably it is to be performed as in Example ①.

† Here, the *tempo* is too fast to allow a stop on the 1st note, consequently the Turn is performed like a quintolet.

3. If the sign is placed *between* two essential-notes of same pitch, these two are to be considered as first and last notes of the turn, respectively, and the other three (3) middle notes of the group are to be performed either as a triplet, or as in all preceding examples, as to their valuation:

The speed and character of the composition are always to be considered, in order to decide which form is best suited.

The same is to be done if the sign is placed between two essential-notes, the first one being a ternary value having fractional parts of beats. (See II, above.) If the *higher* auxiliary-note in a Mordent or in a Turn is to be *altered* in a different manner than the established key, the alteration is to be placed *above* the sign, thus: $\overset{\sharp}{\sim}$; on the contrary, it is to be written *below* the sign, if the *lower* auxiliary-note is to be altered: $\underset{\sharp}{\sim}$

(c) A **Trill** consists of the rapid and even alternation of the essential-note with its higher auxiliary, and must last the entire time-value of the essential-note. It is indicated by the following: *tr.*, which abbreviation is often accompanied by the additional line: ~~~~~

A Trill must always be started with the essential-note unless otherwise indicated. When it is to be started with the higher auxiliary-note it is customary to write that auxiliary-note before the essential-note in the manner of a Grace-note. Exceptionally, trills are performed with the lower auxiliary-note; in this case it is also indicated as a small note, next to the essential-note:

When a Trill is to be ended with notes foreign to the Trill, they are indicated in a group (in small notes), at the end of the Trill-line, and these are to be performed in the same proportion as the notes of the trill itself. They form what is known as **trill-ending:**

Ex:

CHAPTER THIRTEEN

Principal Chords and Their Inversions; Harmonic and Melodic Progressions; Phrases; Cadences; Passing-notes

A **Chord** is a group of three (3) or more notes sounding simultaneously, and arranged in accordance with harmonic laws.

Chords are formed of three or more notes arranged in thirds above a given note called **Root** or **Fundamental,** or capable of being so arranged.

Exclusive of the root of a chord, the number of other notes it contains determines the number of inversions of this chord.

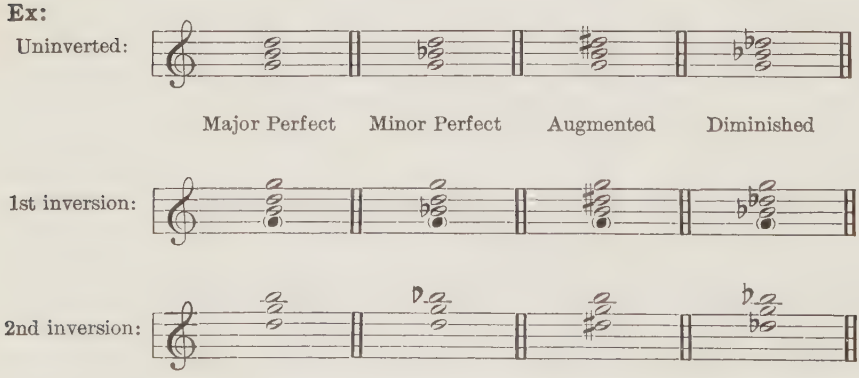
A chord in its primitive arrangement must always be made of a succession of thirds. So formed, it is called an **Uninverted chord.** The *first inversion* occurs when the chord has the *2nd* note of the uninverted chord as **bass-note** (lowest note).

The *second inversion* occurs when the chord has the *3rd* note of the uninverted chord as **bass-note,** etc.

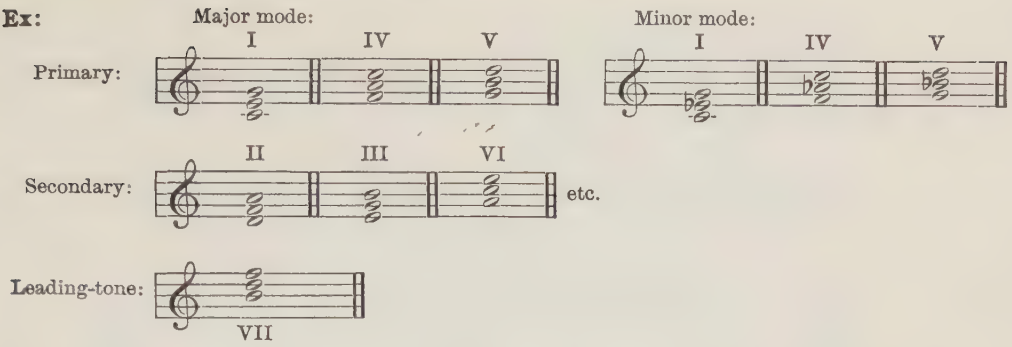
The elementary chords are the triads, as explained in Chapter Seven.

If the fifth of the triad is perfect, the chord is called **Perfect triad** and furthermore will be called major or minor according to the third of the triad. If the fifth of the triad is augmented or diminished, accordingly the chord will be called **Augmented or Diminished** triad.

In the former, the *third* of the triad is a *major 3rd* above the root, and in the latter, it is a *minor 3rd* above the root:

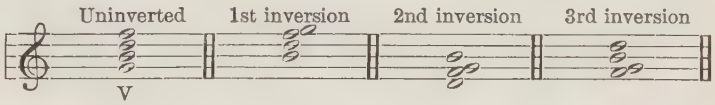
Ex:

The triads formed on the tonal-notes of any scale are called **Primary chords**; those formed on the supertonic and modal-notes (in Major) are called **Secondary chords,** and the chord formed on the 7th degree (diminished chord in major) is called **Leading-tone chord.**

Ex:



A **Seventh** chord is a chord of four (4) notes; among them, the most important is the **Dominant Seventh Chord,** so called because its root is the dominant of the key.

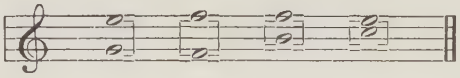
Ex: (C-major).



Harmonic and Melodic Progressions

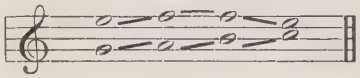
The Harmonic intervals formed between each note of a chord and the corresponding intervals of the next chord are called **Harmonic progressions** or *movements* (reading vertically):

Ex:

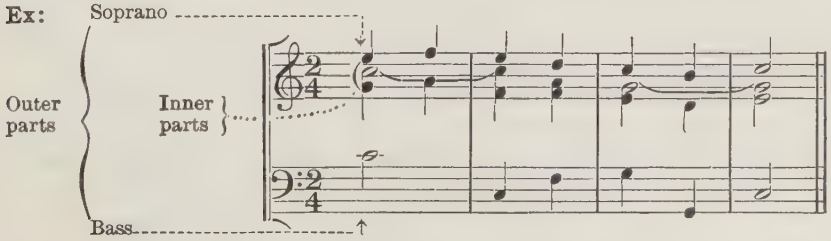


The intervals formed between a note of a chord and the corresponding note of the next chord are called **Melodic progressions** or *movements* (reading horizontally):

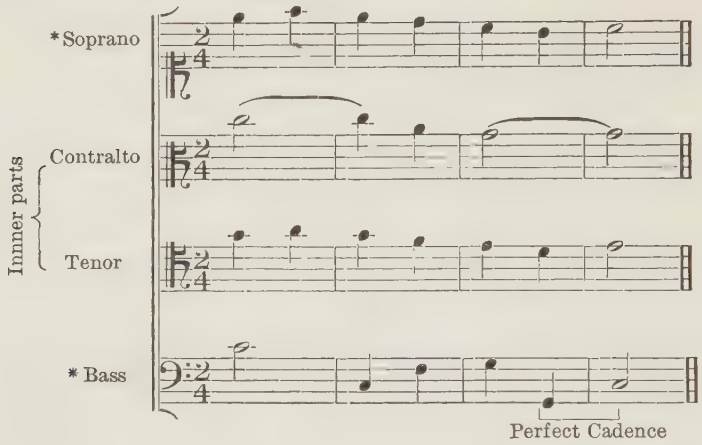
Ex:



The notes forming the *lowest* part of chords are called the **Bass.**
The notes forming the *highest* part of chords are called the **Soprano,** or *upper part.*,
The notes forming the *middle* part of chords are called the **Inner parts.**

Ex:

The ensemble, or group of parts of chords, forms a **Score.**

The staves of the score are generally connected by a **Brace.**

Ex: (Same as the foregoing example, written in score form; vocal quartet: Bass, Tenor, Contralto, Soprano.)

Phrases; Cadences

A **Phrase** in music is equivalent to a *sentence* in language. A **Complete phrase** is that which ends on a note or chord giving an absolute sense of repose.

A Phrase is made up of half-phrases or parts of phrases, which can be compared to the parts of sentences, separated by *commas* and *semi-colons.*

A **Cadence** is the ending of a part or complete phrase. It establishes, so to speak, the punctuation of a musical composition, since it gives a more or less complete sense of repose.

There are five (5) kinds of Cadences:

(1) **Perfect cadence**
(2) **Imperfect cadence**
(3) **Deceptive cadence**
(4) **Cadence on the dominant**
(5) **Plagal cadence**

The melodic movements of the Bass determine the cadences.

(1) A **Perfect cadence** is determined when the bass progresses from the *dominant* (V) *to the tonic* (I), — uninverted chords.

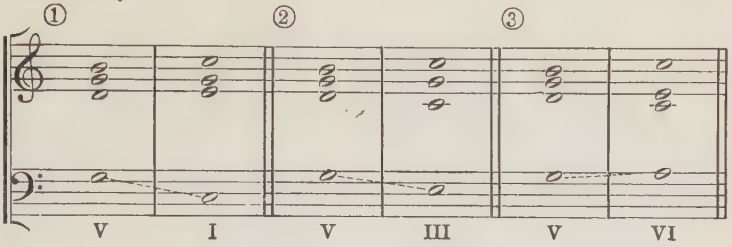
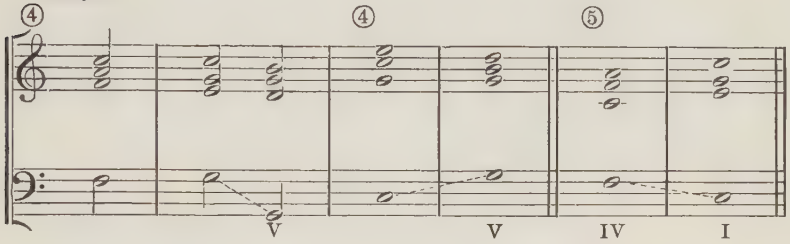
(2) An **Imperfect cadence** is determined when the bass progresses from the *dominant* (V) *to the mediant* (III), — 1st inversion of tonic triad.

(3) A **Deceptive cadence** is determined when the bass progresses from the *dominant* (V) *to the submediant* (VI), — uninverted.

(4) A **Cadence on the dominant** is determined when the bass progresses from *any degree to the dominant* (V), — uninverted.

(5) A **Plagal cadence** is determined when the bass progresses from the *subdominant* (IV) *to the tonic* (I), — uninverted chords.

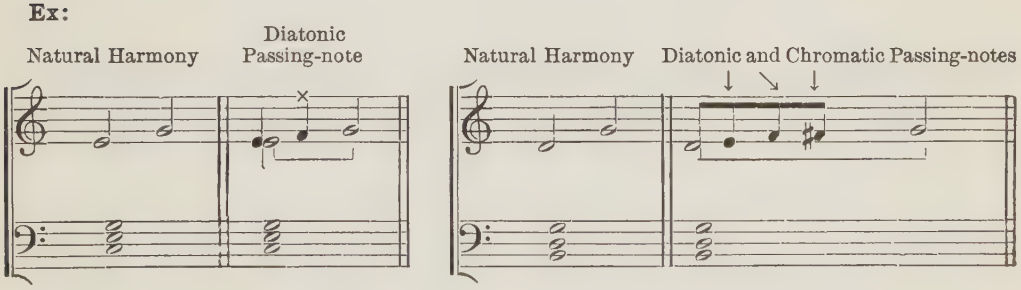
* Outer parts.

Ex: C-major

C-major

A Passing-note is a note that does not belong to the natural harmony, and which serves to fill an interval between two principal melodic-notes, so as to form a sort of " bridge " between them.

A Passing-note may be **diatonic** or **chromatic.**

It is *diatonic* when it belongs to the key in which the piece is written.

It is *chromatic* when it does *not* belong to the established key and has to be chromatically altered:

Ex:

CHAPTER FOURTEEN

Words and Signs Applied to Musical Composition

When an artist wishes to interpret a musical composition, he must, in addition to performing the correct pitches together with their correct valuation, give to his performance some points of interest.

In order to help the performers, the composers use, besides mere notes and time-values, an infinite variety of words and signs; when added to the musical notation they help the artists to comprehend more definitely the exact meaning of the work at hand.

The **general pace** of a composition is usually expressed at its beginning by Italian words (sometimes French or German words are used). These words, called **Tempo-marks,** do not indicate an absolute rate of speed, but only the *general speed-rate.* When precision is desired, the Metronome mark is added to the Tempo-mark (see page 75). The principal words used to that effect are: —

Adagissimo.....slow
Adagio.....a little less slow than *Adagissimo*
Adagietto.....a little less slow than *Adagio*
Andante (or **And**^{te}).....going along, moving
Andantino (or **And**^{no}).....going along, moving
Allegro (or **All**^{ro}).....lively
Largo.....broad, stately
Larghetto (or **Larg**^{tto}).....a little less broad and stately than *Largo*
Largamento.....a little less broad and stately than *Larghetto*
Lento.....slow
Moderato (or **Mod**^{to}).....moderately
Presto.....quick, rapid
Presstissimo.....very quick

The general-pace may be modified by other words, which imply an *acceleration,* a *slackening of speed,* a *suspension* or *return to the original tempo.* The principal words are:

ACCELERATION:

Animato.....animated
Accelerando (or **accel.**).....faster
Stringendo (or **string.**).....faster
Più mosso.....a little more
Stretto.....hurry

SLACKENING OF SPEED:

Allargando (or **allarg.**).....broader
Calando (or **cal.**).....slower and softer
Rallentendo (or **rall.**).....slower and slower
Ritardendo (or **ritard.**).....slower and slower
Ritenuto (**rit.**).....slow down
Slargando (or **slar.**).....broader

SUSPENSION:

ad libitum (or **ad lib.**) ..... as one wishes
a piacere ..... at pleasure
Senza tempo ..... without any definite tempo

RETURN TO ORIGINAL:

a tempo ..... back to general *tempo*
Primo tempo ..... back to first *tempo*
Stesso tempo ..... same *tempo*
Tempo ..... back to regular *tempo*

To the general *tempo-marks* are also assigned other words which give a more definite idea of the *character* of the piece; the principal words affecting the character are:

Amabile ..... amiable
Affettuoso ..... affectionately
Amoroso ..... very affectionately, lovingly
Agitato ..... agitated
Appassionato (or **Appass^to**) ..... passionately
Brillante ..... brilliant
Con brio ..... with brilliancy
Cantabile ..... as if sung
Con anima ..... with animation
Con fuoco ..... with fire
Con spirito ..... with wit, spirit
Capriccioso ..... capricious
Con bravura ..... bravely
Con delicatezza ..... with delicacy
Con grazia; Grazioso ..... with grace; graceful
Contenerezza ..... with tenderness
Delicato ..... delicately
Dolce ..... softly
Doloroso ..... with deep sorrow
Drammatico ..... dramatically
Energico ..... energetically
Expressivo; Con espressione ..... expressive, with expression
Giocoso ..... gay, jolly
Innocente ..... innocent
Lagrimoso ..... as with tears
Maestoso ..... masterly
Furioso ..... furious, with fury
Nobile ..... nobly
Pesante ..... heavily
Pomposo ..... pompous
Religioso ..... religiously
Risoluto ..... resolutely
Rustico ..... rustic
Simplice ..... simple, with simplicity

Sostenuto.....sustained
Tranquillo.....calm, tranquil
Tristamente.....sad, with sadness
Vivace.....lively, quick

A *tempo-mark* or *character-word* may be modified by one of the following adverbs:

Poco.....a little
Poco animando.....a little faster
Poco più.....a little
Molto più.....a little more
Non tanto.....not so much
Non troppo.....not too much
Assai; Molto.....quite
Quasi.....such as (like)
Meno.....less
Peco meno.....a little less
Sempre.....always; still

Tone-color, or **coloring,** is the difference brought about by more or less power in tone production.

Shadings or *nuances* are the subtile modifications of colorings.

COLOR TERMS:

Pianissimo.....	(*pp*)	very soft
Piano.....	(*p*)	soft
Mezzo piano.....	(*mp*)	medium soft
Sotto voce; mezza voce.....		medium
Mezzo forte.....	(*mf*)	medium loud
Forte.....	(*f*)	loud
Fortissimo.....	(*ff*)	very loud

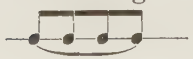
SHADINGS OR NUANCES:

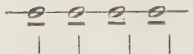
Forte piano.....	(*fp*)	loud and suddenly soft
Piano forte.....	(*pf*)	soft and suddenly loud
Rinforzando.....	(*rinf; rfz*)	reënforce
Sforzando.....	(*sfz*)	reënforce
Crescendo.....	(*cresc.*)	louder and louder
Diminuendo; decrescendo	(*dim; dec.*)	softer and softer

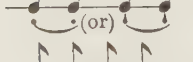
Morendo (*mor.*);— **Perpendosi** (*perd.*);— **Smorzando** (*smorz.*), dying away; softer.

There are, besides these numerous words, other terms applied to the **accentuation** or **articulation** of a particular passage.

Following are the signs and words:

 =**legato**.....smoothly, sustained, connected

 =**tenuto**.....very sustained



=**portamento; non staccato**..half sustained

=**staccato**.....separately, detached, disconnected.

CHAPTER FIFTEEN

Synopsis; General Definitions (in the order of their occurrence in this book)

1. **TONES** — Musical sound or tone is different from noise in that it has a fixed height. Sound has four (4) properties: "*Pitch; Duration; Intensity; Timbre.*"
2. **STAFF** — A Staff is a group of *five* (5) *parallel, equidistant* and *horizontal* lines used to notate music. The distances between the lines are called "*spaces*" or "*inter-lines.*"
3. **PITCH-NAMES** (Notes) — Music requires the use of sounds, denoted by means of *letters* or *syllables.* There are seven (7) pitch-names: *A; B; C; D; E; F; G;* or *La; Si; Do; Re; Mi; Fa; Sol.* (See Note, page 94.)
4. **LEGER-LINES** are small horizontal lines, parallel to the staff-lines, drawn *above* or *below* it, for each note that is higher or lower in pitch than the notes written on lines and spaces of the staff. Not more than *five* leger-lines used.
5. **ALTERATIONS** are signs used to *modify* the natural pitch of notes in front of which they are placed. *Five* (5) kinds of alteration signs are used: "*Double-flats* (𝄫); *Flats* (♭); *Naturals* (♮); *Sharps* (♯); *Double-sharps* (𝄪)."
6. **CLEFS** are signs used to properly name and place the notes upon the staff (these being called after the clef) and to denote the relationship of tones and registers. Three (3) clef signs are used: F-clef (𝄢) — C-clef (𝄡) — G-clef (𝄞).
7. **REGISTERS** is the name given to certain groups of tones, as compared to each other. The whole cycle of sounds is divided into registers of *seven* (7) pitch-names starting with C, determining the exact location of these notes within the entire cycle.
8. **VALUES** — To determine the duration of musical sounds we use "*Note and Rest*" values. There are *nine* (9) kinds: *Maxim; Whole; Half; Quarter; Eighth; Sixteenth; Thirty-second; Sixty-fourth; Hundred and twenty-eighth* (notes or rests, as the case may be).
   The *round* part of a note is called the "*Head.*"
   The *line* drawn to the head is called "*Stem.*"
   The *curved* line attached to the stem is called "*Hook.*"
   All note and rest-values compare in geometrical progressions.
9. **DOTS** are placed *after* note or rest-values in order to *increase* their duration. Not more than *three* (3) dots generally used.
10. **TIES** are curved lines connecting the *heads* of two (2) or more notes of *same pitch* uniting their time-values into *one continuous sound.* (Rest-values cannot be tied.)
11. **BINARY** is a term applied to all that progresses by *two* (2) and multiples.
12. **TERNARY** is a term applied to all that progresses by *three* (3) and multiples.
13. **QUINARY** is a term applied to all that progresses by *five* (5) and multiples.
14. **ARTIFICIAL** divisions are all *unnatural* divisions and groupings of note and rest-values.
15. **ABBREVIATIONS** (musical) are used to simplify musical notation.
16. **TIME** is the general name given to groupings and divisions of note and rest-values forming a standard for the proper accentuation of these notes and rests.

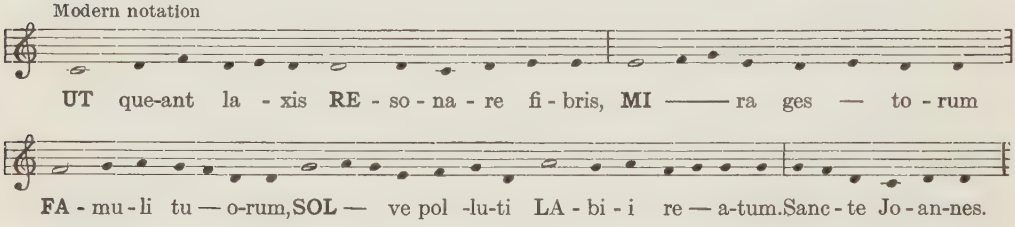
17. **SIMPLE** time is that which contains binary values per beat.
18. **COMPOUND** time is that which contains ternary values per beat.
19. **TIME-SIGNATURE** is the term used to denote the figures written in fraction-form, determining the time.
20. **MEASURE** is one of the divisions of a musical composition, according to the time-signature, within which values are grouped.
21. **BAR-LINES** are *vertical* lines drawn across the staff in order to *separate* measures from each other.
22. **BEATS** are the sub-divisions of the measures into small fragments of equal duration.
23. **TIME-BEATING** consists in indicating each beat in a measure by *arm-motion*, while sight-singing, or this is done by one person (Conductor) for any group of musicians performing together.
24. **STRONG** and **WEAK** beats (or parts of beats) are the result of the grouping of accented and non-accented values.
25. **SYNCOPATION** is the result obtained by the performance of a note on a *weak* beat (or part of beat) when *prolonged* over the following *strong* beat (or part beat).
26. **COUNTERBEAT** is the result obtained by the performance of a note on a *weak* beat (or part beat) — followed by a *rest* on the ensuing *strong* beat (or part beat).
27. **ANACRUSIC** rhythm (or phrase) is a rhythmical pattern or musical phrase beginning on *any* beat or part of beat, other than the very *first* beat in the measure.
28. **THETIC** rhythm (or phrase) is a rhythmical pattern or musical phrase starting *on* the *very first* beat of the measure.
29. **RHYTHM** is the result of the *relationship* between phenomenon of *duration* and phenomenon of *intensity*.
30. **GENDERS** (Genus) is the general term given to the *ensemble* of *musical "sexes,"* so to speak. There are three (3) musical genders: *"Diatonic; Chromatic; Enharmonic."*
31. **DIATONIC** determines all that is musically *different* in *pitch* and *name*.
32. **CHROMATIC** determines all that is musically *different* in *pitch* but *same* in *name*.
33. **ENHARMONIC** determines all that is musically *different* in *name* but *same* in *pitch* (practically).
34. **ADJOINING** determines all that is in *adjacent order* (musically).
35. **DISJOINED** determines all that is in *any order*.
36. **WHOLE TONE** is the *largest* pitch difference between two adjoining notes.
37. **HALF-TONE** is the *smallest* pitch difference between two adjoining notes.
38. **COMMAS** are the subdivisions of whole tones (there are nine commas in a whole tone).
39. **ASCENDING** determines all that progresses *upwards*.
40. **DESCENDING** determines all that progresses *downwards*.
41. **SCALE** is a *series* of *adjoining* notes extending an octave and progressing in a given order.
42. **DEGREE** is the general name given to any one note in a scale.
43. **DIATONIC SCALE** is that which progresses by whole tones and diatonic half-tones. It contains *seven* (7) degrees.

44. **MAJOR** and **MINOR** are terms applied to scales, determining the *position* of the *half-tones* in said scales.
45. **NATURAL; MELODIC; HARMONIC** are the three (3) different kinds of minor scales used.
46. **RELATIVE** scales are those which are made up of the *same notes*, but which start on a *different one*.
47. **KEY-SIGNATURE** is the *group* of alterations pertaining to the construction of any scale.
48. **TETRACHORD** is a scale series of *four* (4) degrees (arranged in the progression of two (2) successive whole tones and one (1) diatonic half-tone).
49. **INTERVAL** determines the pitch *distance* between any two degrees.
50. **COMPOSITION** (of interval) determines the *sum* of whole and half-tones contained within the degrees forming that interval.
51. **QUALIFICATIONS** are the "size-words" given to intervals, determining how *large* or how *small* the involved interval is.
52. **INVERSIONS** are the *changed relative position* of notes forming an interval.
53. **MELODIC** determines all musical progression in *single notes*.
54. **HARMONIC** determines all musical *group* of notes sounded *simultaneously* and their ensuing progressions.
55. **CONSONANCE** is a combination of two (2) or more notes, harmonious and pleasing in itself, and requiring no further progression to make it satisfactory.*
56. **DISSONANCE** is a combination of two (2) or more notes requiring a resolution.*
57. **CHORDS** are the systematic arrangement of three or more notes, according to harmonic laws.
58. **TRIADS** are *chords of three* (3) *notes* arranged in thirds one above the other, or capable of being so arranged.
59. **VIBRATION** is the rapid oscillation of any tone-producing body.*
60. **OVERTONES** or **HARMONICS** is the series of tones sounding with, but higher in pitch and less intense than its generator.*
61. **TONAL** notes are the 1st, 4th and 5th degrees of any major and minor scale.
62. **MODAL** notes are the 3rd and 6th degrees of any major and minor scale.
63. **KEY** determines the *ensemble* or family of *tones* forming any given major or minor *scale*.
64. **TONALITY** is the general name given to the *ensemble of scales, modes and keys* used.
65. **MODE** determines the *manner* in which a scale or key is *constructed*, with special reference to the arrangement of whole and half-tones in said scales.
66. **PARALLEL** scales are scales that start on the *same note* but have a *different Signature* and consequently are of a *different mode*.
67. **CHROMATIC** scale is that which progresses by *chromatic* and *diatonic half-tones only*. It contains *twelve* (12) degrees.
68. **NEIGHBORING** scales or keys are those which have the most notes in common, being closely related through their tetrachords and signatures.
69. **MODULATION** is the process by which one passes *from one key to another* or *from one mode to the other*, according to melodic and harmonic laws.
70. **TRANSPOSITION** is the process of writing, reading or performing a musical composition in a key *other* than the original.

* Dictionary of Musical Terms, Theo. Baker.

71. **TUNING-FORK** is a steel instrument of invariable pitch, used to tune musical instruments.
72. **METRONOME** is a mechanical instrument actuated by clock-work, used for precision of time, and rhythm.
73. **ORNAMENTS; EMBELLISHMENTS** are series of notes, foreign to the natural harmonies, and used or written as "graces" to the melody.

Note: The syllabic denomination of pitches was invented by GUIDO, monk of the Abbey of Pompose, who was born in Arezzo (Toscane) towards the end of the tenth century. GUIDO is generally known as GUIDO d'AREZZO.

He made use of the initial syllable of the successive phrases of a hymn to *St. John* (as follows):

Modern notation
UT que-ant la - xis RE - so - na - re fi - bris, MI ——— ra ges — to - rum
FA - mu - li tu — o-rum, SOL — ve pol -lu-ti LA - bi - i re — a-tum. Sanc - te Jo - an-nes.

The sound of the first syllable **"UT"** being hardly noticeable, the Italians substituted the syllable **"DO."** The latter has been generally adopted for all solmisation purposes.

A MON PÈRE,

Je dédie ce chapitre, avec beaucoup d'affection, et d'admiration reconnaissante.

CHAPTER SIXTEEN

General Principles of Musical Interpretation

This Chapter will be limited to an exposition of the principal rules governing **Musical Interpretation**; explaining in a general manner the principles of punctuation, accentuation, etc.

This exposition will be divided as follows:

1. Analysis of a musical composition, according to its rhythmic, melodic, and harmonic elements.
2. Anacrusic phrases.
3. Thetic phrases.
4. Punctuation (breathing).
5. Repeated notes.
6. Slurred notes (in groups of two).
7. Syncopation.
8. Long and short values.
9. *Crescendi* and *diminuendi; accelerandi* and *rallentandi.*
10. Endings (partial or complete; " feminine " or " masculine ").

1. Analysis

(a) Concerning the **Rhythmic** analysis: the principal thing is to discover, first of all, the " designs " which always compose a piece of music: similitudes, " bridges "; long and short values; repeated notes; syncopation, etc.

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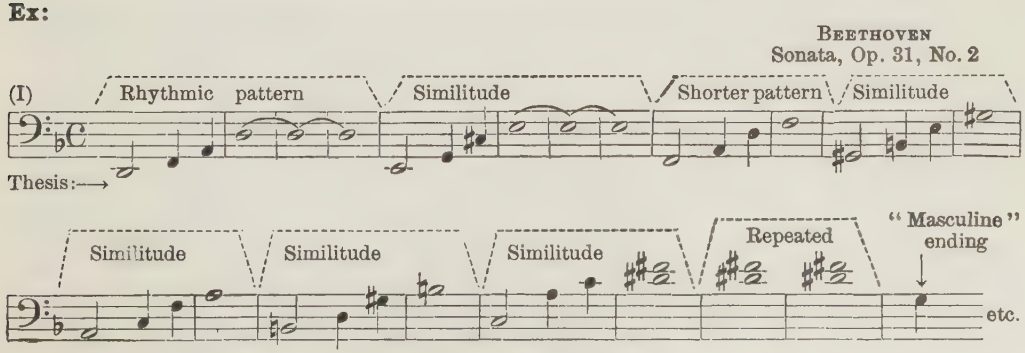
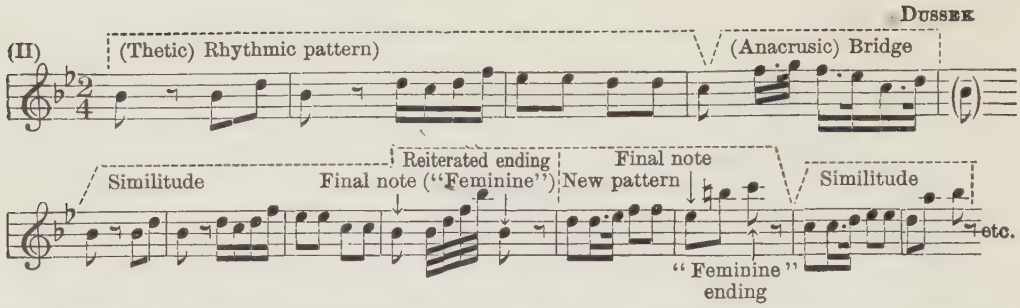
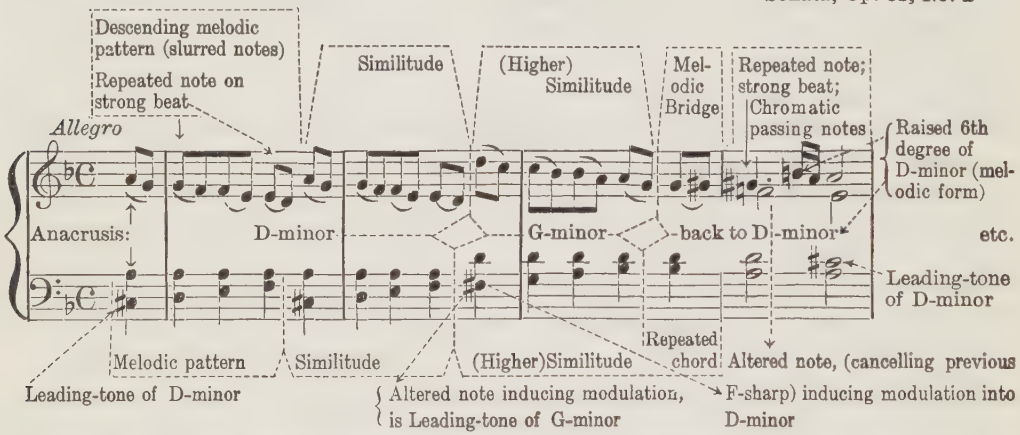



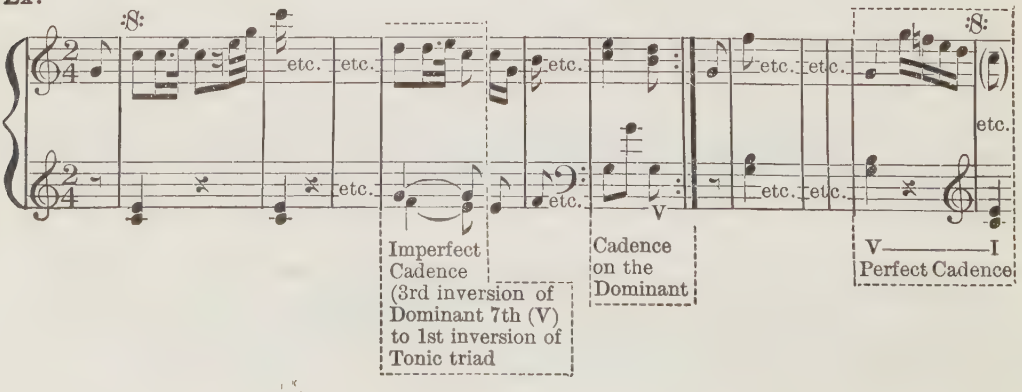
(b) Concerning the **Melodic** analysis: observe which are the ornamental notes; whether the melodic pattern ascends or descends; which are the altered notes, and whether these are simply chromatic, or inducing modulations.

Ex:



(c) And, finally, as to the **Harmonic** analysis (we here mean for those who are not familiar with all of the laws of **Harmony,** but have an *elementary knowledge* of *cadences, modulation, triads* and *keys*): the main point is to define the Cadences — which are of vital importance for a clear punctuation — and find the places where the modulations occur and resolve.

Ex:

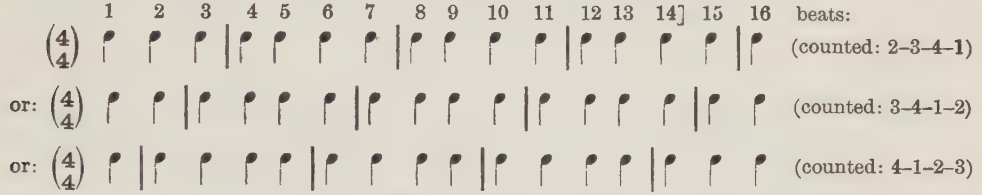


2. Anacrusis

We have already explained in Chapter IV the meaning of an **Anacrusic** rhythm or phrase.

If one considers any rhythmic pattern in accordance with its metric valuation, almost invariably, the total number of beats contained in its rhythm is *equal* to, or is a *multiple* of, the number of beats in a measure, as indicated by the Time-signature.

For example: should we consider a very simple rhythmic element of a four-measure phrase in four-four time, the total number of beats within the four measures will therefore be *sixteen*; these sixteen beats can be arranged in several ways: —

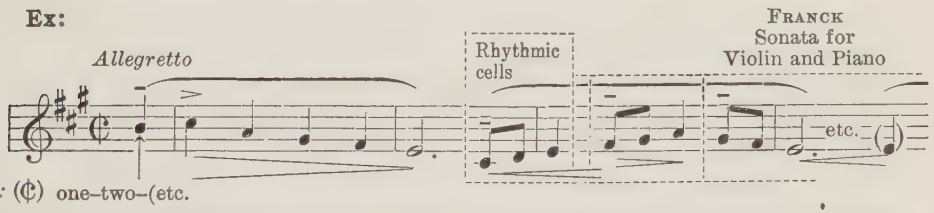


An Anacrusic rhythm constitutes, so to speak, a change of place of the bar-line, hence, a change of place in the initial accent.

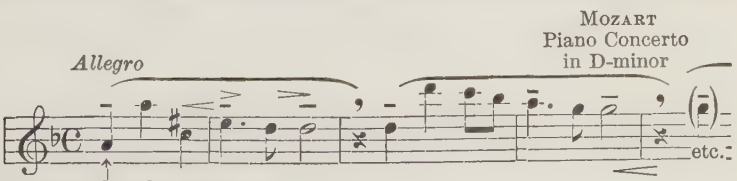
It is therefore necessary to consider the bar-line as a material means used for musical notation, and groupings of values, but *not* as an absolute indication of an accent on the *first* beat (which comes after the bar-line), nor as a place to breathe (or punctuate).

The initial note of an anacrusis must always be (more or less) emphasized, according to the general character of the piece at hand.

It will always be of help to the executant to mentally represent all the beats which " would " *precede* the anacrusic rhythm, in order to obtain a good beginning, which is of vital importance for the interpretation of any musical composition.

Ex:

Should there be but one "empty" beat (as in following example), and should the executant be playing solo, or should he have to start alone (without preceding measures of accompaniment), he can allow one extra complete measure to himself.

Ex:



Should the *tempo* be fast, two (2) measures (*preceding* that of the Anacrusis) should be counted.

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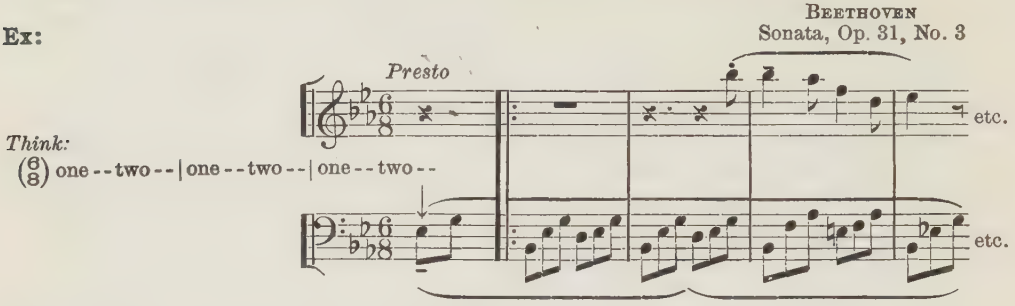
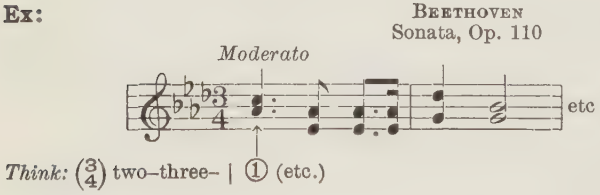

3. Thesis

All musical compositions that begin with a Thesis, that is to say, *on* the very first beat of the measure (which is naturally a strong beat), will demand an accent or emphasis on the initial note; but this does not necessitate a great deal of thinking, since it is a natural thing for anyone to do.

The only "inner-thinking" we would recommend — always for the sake of a good beginning, and the rhythmic sense of the composition — is to count at least two (2) "empty" beats preceding that of the Thetic rhythm.

Ex:

4. Punctuation

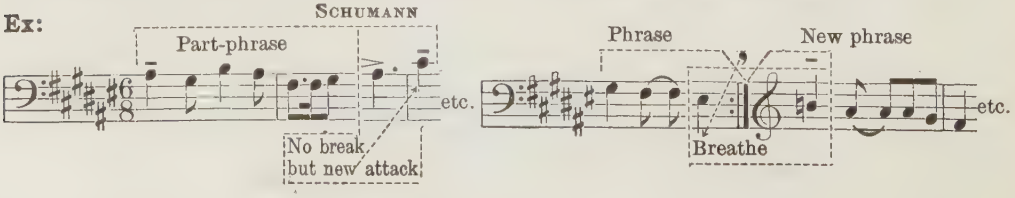
A good musical punctuation is determined after the cadences and modulations have been carefully established.

Runs, or fast and long passages, in which the bass does not actually form a cadence, should be analyzed as to their modulations, which are the equivalents of cadences when these are not present.

When a complete phrase has been performed, a *fresh start*, a *new attack* should be made on the note that follows that which marked the final point of the preceding phrase (breathing).

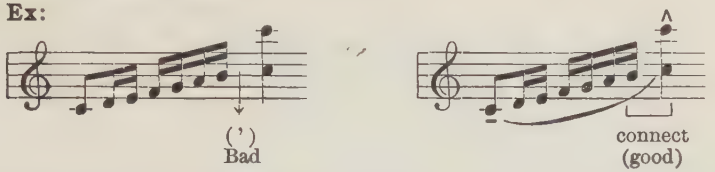
Should it be a part-phrase only, there should be *no* break, but a new attack or emphasis is necessary after the final of the preceding part-phrase.

Ex:



Never break a run or melodic passage between its last two notes, even if a technical difficulty occurs at that place.

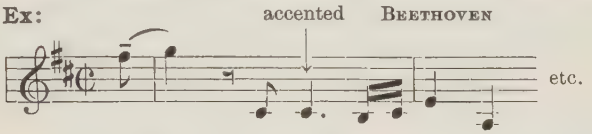
Ex:

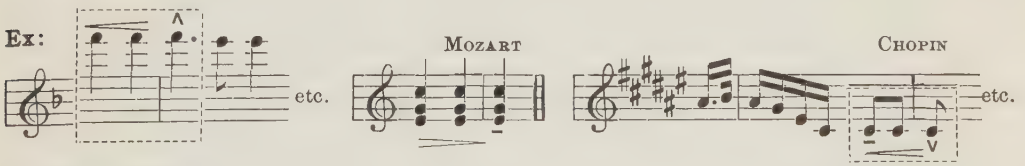


Note: It we were to compare the cadences with grammatical punctuation (in a somewhat free manner), we would say that a Perfect Cadence (with the tonic in soprano) corresponds to a period (.); a Perfect Cadence (with the third in soprano), or a Plagal Cadence, correspond to a question-mark (?) or exclamation-mark (!) or period (.); a Deceptive Cadence, or a Cadence on the Dominant, correspond to a comma (,) or semi-colon (;) or colon (:).

5. Repeated Notes

A note that is repeated requires to be accented, especially if it comes on a strong beat (or strong part of beat), in comparison with the one that precedes it.

Ex:

In a series of three or more repeated notes, each should be played differently as to its degree of intensity; each being performed louder than the preceding, or softer, or have a *crescendo*, then a *diminuendo* (or the reverse). Here — with the good taste of the executant — the place that the aforesaid group of repeated notes occupies in the measure, and, the importance of the group (melodically and harmonically) within the phrase, should all be taken into consideration by the performer.

Ex:

6. Slurred Notes

When two notes are slurred (*legato*), the first one should be emphasized and lengthened, and the second one softened and shortened (even if both are of the same value).

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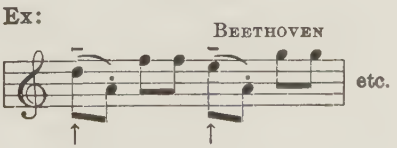
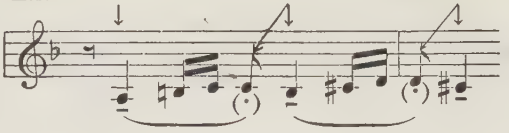

7. Syncopation

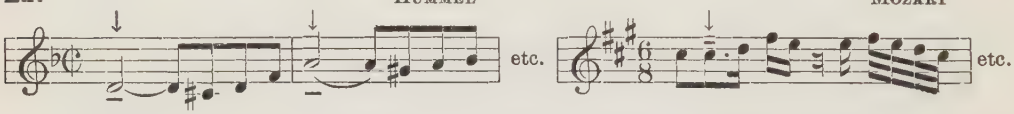
All syncopated notes (or passages) should be accented. If there is but *one* syncopated note, it will necessitate an emphasis.

To obtain it, the note that precedes it should be somewhat shortened in its value, (and softened), so that the emphasis may be more noticeable.

Ex: FRANCK

8. Long and Short Values

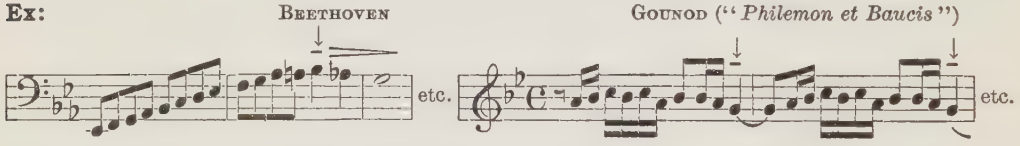
The time-value of a note, within a measure (or phrase), in comparison to the others (shorter ones) determines an emphasis on the longer value; the other shorter values must be performed in a softer and lighter manner.

Ex: HUMMEL MOZART



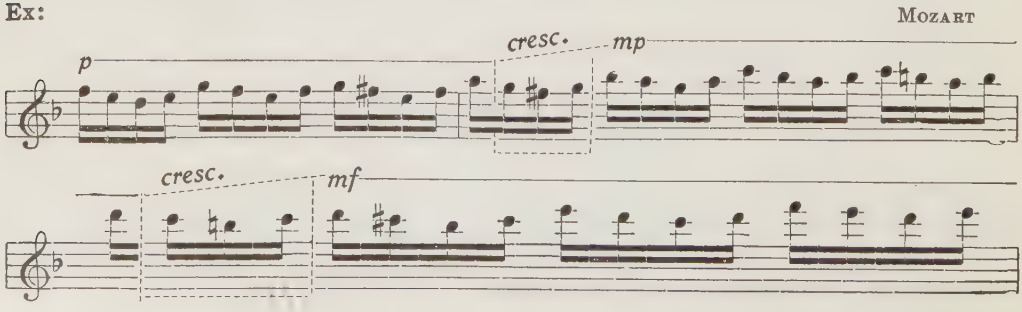
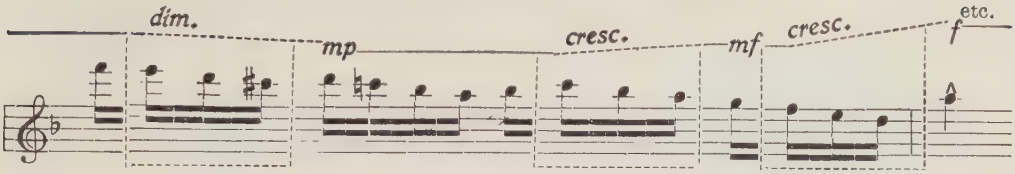
Similarly, a long value after one or several shorter units, demands an emphasis. even if on a weak beat (or weak part of beat).

Ex: BEETHOVEN GOUNOD (" *Philemon et Baucis* ")



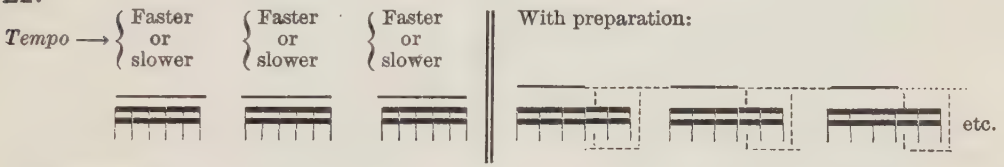
9. *Crescendi, diminuendi, accelerandi, rallentandi*

When one of the above is indicated, especially if in a long series, it is unpractical, if not impossible, to actually make *each* note louder, softer, faster or slower, than the one that precedes it. Consequently, we would advocate the " blocking " of patterns that are similar in construction, or of certain groups of notes, so that they will be considered by the executant as " steps," and performed *as a whole block,* at the *same degree* of intensity or speed, until the next step is reached, which in turn will be performed a little louder, softer, faster or slower, as the case may be. However, a too literal interpretation of the above would result in a jerky and angular performance; hence, the necessity of " preparing " the next degree of intensity or speed. (Generally, the *last three* notes of a step are a good proportion for preparing an increasing or decreasing intensity.)

Ex: MOZART



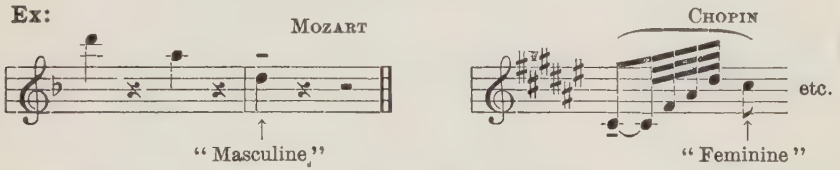
For *accelerandi* and *rallentandi*, the same process may be used, but this time, the "steps" will represent faster or slower rates of speed, instead of louder or softer degrees of intensity.

Ex:



10. Endings

An ending (partial or complete, i.e., part or complete phrase) is "masculine" when it occurs on a strong beat; it is "feminine" when on a weak beat. The former is generally emphasized, while the latter is not.

Ex:

Synopsis: *Emphasize* (1) the initial note of an anacrusis.
" (2) the note that follows the final one of the preceding phrase (complete or incomplete).
" (3) the second of two repeated notes (when occurring on a strong beat).
" (4) the first of two slurred notes.
" (5) all syncopated notes.
" (6) the longest value (within a measure) compared to the others.
" (7) the long value, occurring after a series of comparatively shorter units.
" (8) the final note of a "masculine" ending.

Breathe (1) between two phrases.
" (2) after a long value (never after a short value, except in the case of its being an ending); before a syncopated note; after the second of two slurred notes.

Note: We strongly recommend reading "Musical Expression," by Mathis Lussy (Novello & Co. Publisher, London).

The End

Abbeville (France) 1920.
Yarmouth (Me., U. S.) 1924.

Theory books recommended by Jirka Rudnizka

* Richard Franko Goldman, Harmony in Western Music. NY: W.W. Norton & Co.

Allen Forte, Tonal Harmony in Concept and Practice. NY: Holt, Rinehart & Winston

Walter Piston

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